



GRADUATE SCHOOL INHA UNIVERSITY

Introduction of Laboratory

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Scholarship Program of Inha Graduate School

| Global Vision Scholarship | | |
|---|--|--|
| Period | Amount | Eligibility |
| Master 1 st ~ 4 th Ph.D. 1 st ~ 4 th Integrated 1 st ~ 8 th | Full amount of Entrance & Tuition fee | ▶ Ph.D. applicants: Those who are recommended by advisor during the application period |
| | | ▶ Master/Integrated applicants: Those who are recommended by advisor and also meet one of two requirements below. ① The advisor's employment period at Inha is less than three years Applicants ② Applicants' undergraduate degree is from Inha University and CGPA of undergraduate level is 3.5 or above. |
| Obligation | | |
| ※ Cumulative GPA should maintain 3.75 or above ※ Work as TA,LA for two semesters during the regular period(Master & Ph.D. 1~4 semester, Integrated 1~8 semester) | | |
| Jungseok International Scholarship | | |
| Period | Amount | Eligibility |
| Master 1 st ~ 4 th Ph.D. 1 st ~ 4 th Integrated 1 st ~ 8 th | 100% of Entrance & Tuition fee (TYPE A) | ① A person who has obtained the qualification to receive 70% of scholarships related to Korean language and a person who meets English Language Eligibility of TYPE D ② A person who has obtained the qualification to receive 70% of scholarships related to English language and a person who meets Korean Language Eligibility of TYPE D |
| | 70% of Entrance & Tuition fee (TYPE B) | ① TOPIK level 5~6 or ② Complete Korean Language Course level 6 which is established by universities in Korea or ③ IBT TOEFL 92(IELTS 7, TOEIC 820) or above |
| | 50% of Entrance & Tuition fee (TYPE C) | ① TOPIK level 4 or ② Complete Korean Language Course level 5 which is established by universities in Korea or ③ IBT TOEFL 78(IELTS 6, TOEIC 740) or above |
| | 30% of Entrance & Tuition fee (TYPE D) | ① TOPIK level 3 or ② IBT TOEFL 71(IELTS 5.5, TOEIC 700) or above |



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| <p>▶ Scholarship can be increased if students meet one of below two requirements.</p> <p>a. Submit materials designated by graduate school</p> <ul style="list-style-type: none"> - Field of Engineering/Natural Science: 1 SCI or above (should be lead author) - Other field: 1 KCI or above (should be lead author) <p>b. Language Certificate: Submit valid language certificate which is higher type than previous one students submitted. (C TYPE to B TYPE, B TYPE to A TYPE)</p> <p>▶ Scholarship increasing from 70% to 100% is impossible(Maximum amount: 70%)</p> |
| Obligation |
| ※ Cumulative GPA should maintain 3.75 or above |


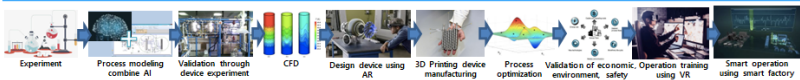









Introduction of Laboratory

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|---|--|---|---|
| Name 성함 | Surname | Joe | |
| | Given Name | Jaewan | |
| Position 직급 | Assistant professor | Gender 성별 | <input type="checkbox"/> Male |
| Department 소속학과 | Architectural engineering department | Major 소속전공 | Building smart operation |
| Contact Information 연락처 정보 | Email | jjoe@inha.ac.kr | |
| | Telephone | 82-32-860-7590 | |
| | Home Page | https://sites.google.com/view/inhasbsg | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D. <u> </u> |
| Research Field 연구분야 설명 | Model-based predictive control Artificial intelligence / Machine learning based predictive building control Distributed optimization Prototype building modeling | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Virtual storage capability of residential buildings for sustainable smart city via model-based predictive control J Joe, J Dong, J Munk, T Kuruganti, B Cui / Sustainable Cities and Society 64, 102491 | | |
| | Empirical Modeling of Direct Expansion (DX) Cooling System for Multiple Research Use Cases J Joe, P Im, J Dong / Sustainability 12 (20), 8738 | | |
| | A model predictive control strategy to optimize the performance of radiant floor heating and cooling systems in office buildings J Joe, P Karava / Applied Energy 245, 65-77 | | |
| Others 기타사항 | Looking for highly motivated (and also will be paid) graduate students. 2 and 4 journal publication would be expected/required by the end of the program for MS and PhD students. | | |



Introduction of Laboratory

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|---|---|--------------------------|--------------------------------|----------------------------|
| Name 성함 | Surname | Hwang | | |
| | Given Name | Sungwon | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Chemical Engineering | | Major 소속전공 | Process System Engineering |
| Contact Information 연락처 정보 | Email | Sungwon.hwang@inha.ac.kr | | |
| | Telephone | +82-(0)32-860-7461 | | |
| | Home Page | http://cepi.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master ____ / Ph.D ____2__ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - Li-ion battery system modeling - Fuel Cell system modeling - Polymer synthesis process development and economic evaluation - CO2 capture and utilization - Hydrogen synthesis, delivery and storage system modeling - Utilization of the waste plastics - Biomass conversion to fuel, etc. - Application AI to Process System Engineering | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Youngtak Jo, Gyuyeong Hwang, Dela Quarme Gbadago, Sungwon Hwang. (2022) <u>Artificial neural network-based model predictive control for optimal operating conditions in proton exchange membrane fuel cells</u> , Journal of Cleaner Production | | | |
| | Jiyoung Moon, Dela Quarme Gbadago, Gyuyeong Hwang, Dongjun Lee, Sungwon Hwang. (2021) <u>Software platform for high-fidelity-data-based artificial neural network modeling and process optimization in chemical engineering</u> , Computers & Chemical Engineering | | | |
| | Hyeonggeon Lee, Niranjana Sitapure, Sungwon Hwang, Joseph Sang-II Kwon. (2021) <u>Multiscale Modeling of Dendrite Formation in Lithium-ion Batteries</u> , Computers & Chemical Engineering | | | |
| Others 기타사항 | <div style="border: 1px solid black; padding: 10px;"> <div style="display: flex; justify-content: space-between;"> <div>  <p>Hwang, Sung Won B.Sc. : Inha Univ. Korea. 1995 M.Sc. / Ph.D. : Manchester Univ. UK 2000 - 2004 Work : GS E&C, AspenTech, UOP (Honeywell) 2012.9. ~ : Dept. Chem. Eng., Inha Univ.</p> </div> <div> <p>Email : sungwon.hwang@inha.ac.kr Phone : +82-32-860-7461 (60anniversary-1109) Fax : +82-32-872-0959 Home : cepi.inha.ac.kr</p> </div> </div> <div style="margin-top: 10px;"> <p>PSE is a discipline that covers all stages related to experimentation, design, manufacture, and operation in various industries, including oil refining, petrochemical engineering, bio, pharmaceutical, etc.</p>  </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 60%;"> <p style="text-align: center; background-color: #4CAF50; color: white; padding: 5px;">Main Research Field</p> <ul style="list-style-type: none">  Design and economic evaluation of Hydrogen Liquefaction process  Modeling and control of modular lithium-ion battery thermal system  Development of CO₂ co-electrolysis synthetic fuel production system  Real-time performance monitoring of chemical process equipment using machine learning  Modeling and economic evaluation of ammonia fuel SOFC output system for large ships  AI-based software platform and digital twin design implementation  AI and CFD mixed-based device design and scale up </div> <div style="width: 35%;"> <p>Development program for Smart Digital Engineering Specialist</p> <ul style="list-style-type: none"> - Operations of M.S. and Ph.D. curriculum for engineering specialist - Technology training and research using the 4th industry <p>Graduate life</p> <ul style="list-style-type: none"> ✓ Education of graduate major ✓ Desired field of research ✓ Participation in domestic and international conferences ✓ Participation in project with industrial <p>Development program for global engineering specialist</p> <ul style="list-style-type: none"> - Program for obtaining joint R&D and multiple degrees by using dispatched to outstanding overseas universities in the field of PSE </div> </div> </div> | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Youk | | |
| | Given Name | Ji Ho | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Chemical Engineering | | Major 소속전공 | Polymer |
| Contact Information 연락처 정보 | Email | youk@inha.ac.kr | | |
| | Telephone | 032-860-7498 | | |
| | Home Page | https://chemengsfpl.wixsite.com/my-site/current-members | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D. <u>1</u> |
| Research Field 연구분야 설명 | (1) Application of Polymer-based Energy Materials (2) Synthesis of Functional Polymers Google Scholar: https://scholar.google.com/citations?user=0W1aX8YAAAAJ&hl=ko | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Height-tunable replica molding using viscous polymeric resins, ACS MACRO LETTERS, 11, 4, pp. 428~433, 2022. | | | |
| | Toxic gas-free synthesis of extremely negative triboelectric sulfur copolymer blends via phase separation of fluorine-rich polymers, NANO ENERGY, 92, 106761, 2022. | | | |
| | Study on preparation methodology of zero-valent iron decorated on graphene oxide for highly efficient sonocatalytic dye degradation, JOURNAL OF ENVIRONMENTAL CHEMICAL ENGINEERING, 10, 107214, 2022. | | | |
| Others 기타사항 | (1) Application of Polymer-based Energy Materials - Li-ion battery separators with high-temperature stability - Binders for Li-ion battery electrodes - Laser-Induced carbonization of polymer film - High-performance micro-supercapacitors (2) Synthesis of Functional Polymers - Efficiently controlled polymerization of block copolymers - Synthesis of stimuli-responsive polymers - Surface modification of polymer - Polymer film hard coating - Synthesis of flame-retardant monomers and polymers | | | |

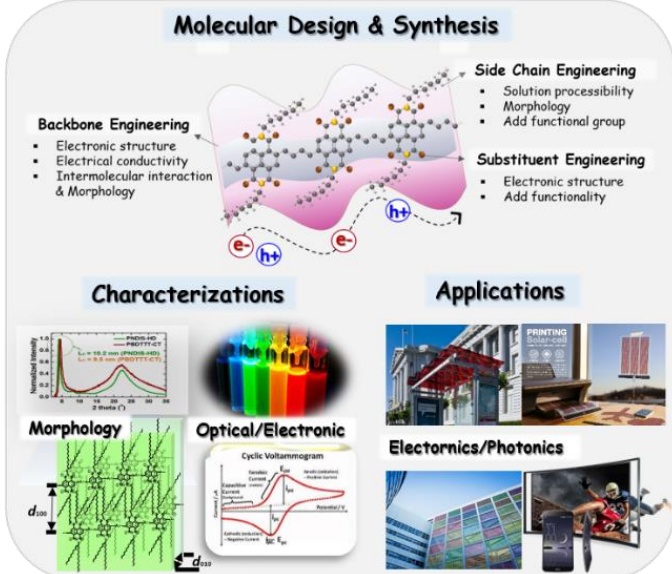


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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Yongjin | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Chemistry and Chemical Engineering | | Major 소속전공 | Chemical Engineering |
| Contact Information 연락처 정보 | Email | yongjin.lee@inha.ac.kr | | |
| | Telephone | +82-32-860-7468 | | |
| | Home Page | https://sites.google.com/view/molsiminha/home | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 2 </u> / Ph.D. <u> 1 </u> |
| Research Field 연구분야 설명 | <p>The overarching theme my research group pursues is the rational design and discovery of novel materials via an integrated approach of experiment, computational modeling, and machine learning/big data analysis. Some specific research projects are as follows.</p> <ol style="list-style-type: none"> 1) Inverse Design of Nanoporous Materials using Molecular Simulation combined with Machine Learning 2) Inverse Design of novel polymers using Molecular Simulation combined with Machine Learning 3) Computational Nanoengineering based on Accurate Atomistic Models | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p>Xiangyu Zhang, Kexin Zhang, Hyeonsuk Yoo and Yongjin Lee*, "Machine Learning-Driven Discovery of Metal-Organic Frameworks for CO₂ Capture in humid condition", ACS Sustainable Chemistry & Engineering 9, 2872 (2021).</p> | | | |
| | <p>Xiangyu Zhang, Kexin Zhang, and Yongjin Lee*, "Machine Learning Enabled Tailor-Made Design of Application-Specific Metal Organic Frameworks", ACS Applied Materials & Interfaces 12, 734 (2020).</p> | | | |
| | <p>Sanfeng He, Hongliang Wang, Jing Cui, Cuizheng Zhang, Yi Yu, Yongjin Lee*, Tao Li*. "A General Way to Construct Micro- and Mesoporous Metal-Organic Framework-Based Porous Liquids", Journal of the American Chemical Society 141, 19708 (2019)</p> | | | |
| Others 기타사항 | <p>Highly motivated students equipped with a research-oriented mindset are more than welcomed. For more information, please visit our website.</p> | | | |



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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Hwang | | |
| | Given Name | Ye-Jin | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input type="checkbox"/> Male <input checked="" type="checkbox"/> Female |
| Department 소속학과 | Chemical Engineering | | Major 소속전공 | Organic semiconductors |
| Contact Information 연락처 정보 | Email | yjhwang@inha.ac.kr | | |
| | Telephone | +82-32-860-7464 | | |
| | Home Page | https://cpslyjhwang.wixsite.com/cpsl | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 0 </u> / Ph.D <u> 1 </u> |
| Research Field 연구분야 설명 |  <p>(1) π-Conjugated Polymer Semiconductors for Electronics and Photovoltaics</p> <ul style="list-style-type: none"> • Design and synthesis of new polymers • Development of new synthetic route • Structure-Property-Performance relationships • Polymer/polymer blend nanomorphology study <p>(2) Organic Electronic Device Engineering</p> <ul style="list-style-type: none"> • Device Physics and Fabrication • Organic Photovoltaics, OLEDs, Transistors <p>(3) Flow Chemistry in Automated Macro-reactor</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Reproducible and rapid synthesis of a conjugated polymer by Stille polycondensation in flow: Effects of reaction parameters on molecular weight, CHEMICAL ENGINEERING JOURNAL, 412, 128572, 2021. | | | |
| | Mechanochemical Degradation of Amorphous Polymers with Ball-Mill Grinding: Influence of the Glass Transition Temperature, MACROMOLECULES, 53, 7795, 2020. | | | |
| | Synthesis and Characterization of a highly crystalline benzotriazole-selenophene copolymer semiconductor, POLYMER, 184, 121856, 2019. | | | |



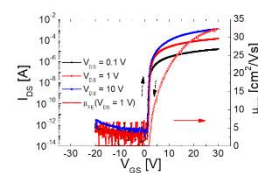
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|---|---|--|--|--|
| Name 성함 | Surname | Shin | | |
| | Given Name | Naechul | | |
| Position 직급 | Associate Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Chemical Engineering | Major 소속전공 | Semiconductor Nanostructures | |
| Contact Information 연락처 정보 | Email | nshin@inha.ac.kr | | |
| | Telephone | +82-32-860-7463 | | |
| | Home Page | www.theshinlab.com | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master ____ / Ph.D <u>1</u> | |
| Research Field 연구분야 설명 | Vapor-based synthesis of low-dimensional semiconductor nanomaterials for hyper-scaling production 1. Vapor deposition of organic-inorganic perovskite thin films 2. Vapor-liquid-solid growth of van der Waals nanowires Chemical vapor deposition of 2D semiconductor materials for optoelectronics | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Sequential Surface Passivation for Enhanced Stability of Vapor-deposited Methylammonium Lead Iodide Thin Films, S. Han, S.-K. Hyeong, S.-K. Lee*, N. Shin*, <i>Chem. Eng. J</i> 439 135715 (2022). [https://doi.org/10.1016/j.cej.2022.135715] | | | |
| | Br-induced Orientation Control of PbI ₂ van der Waals Nanowires and Their Optoelectronics, L. Huh, H. Shim, N. Shin*, <i>ACS Photonics</i> 8 3291 (2021). [https://doi.org/10.1021/acsphotonics.1c01114] | | | |
| | Interlayer Energy Transfer and Photoluminescence Quenching in MoSe ₂ /Graphene van der Waals Heterostructures for Optoelectronic Devices, Y. Hwang, T. Kim, N. Shin*, <i>ACS Appl. Nano Mater.</i> 4 12034 (2021). [https://doi.org/10.1021/acsanm.1c02599] | | | |
| Others 기타사항 | Our group specializes in synthesizing and fabricating semiconductor nanostructures using vapor-based crystal growth methods (chemical vapor deposition, physical vapor deposition, evaporation & sputtering, vapor-liquid-solid growth) for various applications, including optoelectronics, photonics, energy conversion, etc. The prospective student is expected to participate in developing instrumentation and methodology for the controlled growth of van der Waals crystalline materials. | | | |

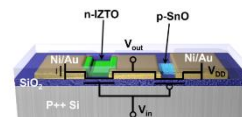


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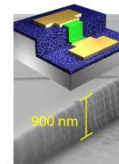
| | | | | |
|---|--|---|--|--|
| Name 성함 | Surname | Baek | | |
| | Given Name | In-Hwan | | |
| Position 직급 | Assistant Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Chemical Engineering | Major 소속전공 | Semiconducting thin film process | |
| Contact Information 연락처 정보 | Email | baek@inha.ac.kr | | |
| | Telephone | +82-32-860-7492 | | |
| | Home Page | https://sites.google.com/view/thinfil/home | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Ph. D. 1 | |
| Research Field 연구분야 설명 | <p>1. Atomic layer deposition process for CMOS thin film devices and M3D application</p> <p>2. Development of vertical DRAM capacitor & transistor</p> <p>3. Selective thin film deposition & etching process</p> <p>4. Research on atomic layer deposition process mechanism of novel precursor</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Controlled orientation and microstructure of p-type SnO thin film transistors with high-k dielectric for improved performance | | | |
| | Cross-linked structure of self-aligned p-type SnS nanoplates for highly sensitive NO ₂ detection at room temperature | | | |
| | High-performance thin-film transistors of quaternary indium–zinc–tin oxide films grown by atomic layer deposition | | | |
| Others 기타사항 | We are actively looking for highly motivated Graduate Students (Ph.D.) and Undergraduate Interns with various backgrounds (chemical engineering, materials science, physics, chemistry, electrical engineering etc.). | | | |



Transfer curve of IZTO TFT



CMOS thin films inverter fabricated at low temperature (<240°C)



Vertical transistor



Introduction of Laboratory

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|---|---|--|---|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Jong-Han | | |
| Position 직급 | Associate professor | Gender 성별 | <input type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Civil Engineering | Major 소속전공 | Smart Structures and Materials | |
| Contact Information 연락처 정보 | Email | jh.lee@inha.ac.kr | | |
| | Telephone | +82-32-860-7564 | | |
| | Home Page | +82-10-4200-3017 | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | (How Many) Master __ / Ph.D _1__ | |
| Research Field 연구분야 설명 | Smart Material and Structural System Lab. mainly focuses on 1) Development and application of inspection and management systems based on data-driven and vision technologies 1) development and application of smart materials to structures, | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Vision-based multipoint measurement systems for structural in-plane and out-of-plane movements including twisting rotation, SMART STRUCTURES AND SYSTEMS , 2017 | | | |
| | Flexural capacity and crack-closing performance of NiTi and NiTiNb shape-memory alloy fibers randomly distributed in mortar beams, COMPOSITES PART B-ENGINEERING, 2018. | | | |
| | Deep neural network for prediction of time history seismic response of bridges, STRUCTURAL ENGINEERING MECHANICS, 2022 | | | |
| Others 기타사항 | | | | |



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|---|---|--------------------------------|--|
| Name 성함 | Surname Given Name | Song KI-IL | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Dept of Civil Engineering | Major 소속전공 | Geotechnical Engineering |
| Contact Information 연락처 정보 | Email | ksong@inha.ac.kr | |
| | Telephone | 010-6388-0449 | |
| | Home Page | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master __1__ / Ph.D. __1__ |
| Research Field 연구분야 설명 | <p><u>Underground space and rock engineering</u></p> <ul style="list-style-type: none"> Tunnel support design using optimization methods Deep and subsea tunnel monitoring system and analysis Structural health monitoring for tunnel using NDT technique AI aid design of TBM Cutterhead <p><u>Sustainable development of infrastructure</u></p> <ul style="list-style-type: none"> Nondestructive characterization for soil and rock using elastic and electromagnetic waves Smart geophysical characterization technique for geo-infrastructures Seismic analysis on aged bridge foundation <p><u>Building digital twin for geo-structures</u></p> <ul style="list-style-type: none"> BIM-CPS-FEM(Building Information Modelling-Cyber Physical Systems- Finite Element Method) model for underground structure and temporary works Development of mobile platform for reinforced slope stability monitoring | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Back analysis of an operating subsea tunnel considering the degradation of ground and concrete lining, Marine Georesources & Geotechnology (2018) | | |
| | Electrical resistivity and elastic wave velocity of sand-cement-inorganic binder mixture, Environmental Geotechnics (2018) | | |
| | Magnesium chloride and sulfate attacks on gravel-sand-cement-inorganic binder mixture, Construction and Building Materials (2018) | | |
| Others 기타사항 | <p>Geomechanics Engineering Lab at Inha University has been involved in many national scientific research projects related to tunnelling. We have a strong background of numerical analysis and computational geomechanics. The finite element programming and genetic algorithm-based optimization by using a Visual Studio Developer that can design a pipe-roof pre-reinforcement system ahead of the tunnel face is supported by the Korean Advanced Institute of Science and Technology (KAIST) and Samsung. We also have a fundamental knowledge on the nondestructive characterization techniques that use elastic wave and electromagnetic wave propagation for the sustainable geotechnical development. Our main research topics are 1) Prediction of penetration rate using machine learning 2) Automation of tunnel support pattern design for NATM tunnel 3) Geophysical characterization for engineered geo-materials 4) Evaluation of segment backfill grouting quality using impact-echo 4) Propagation of elastic wave in jointed rock mass 5) Seismic performance evaluation of aged bridge foundation.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 22%;"> <p>Non-Destructive Testing</p> <ul style="list-style-type: none"> Development of Applications with Elastic and Electromagnetic Wave Wave Propagation in Heterogeneous Ground </div> <div style="border: 1px solid black; padding: 5px; width: 22%;"> <p>Underground Space Technology</p> <ul style="list-style-type: none"> 3D Numerical Analysis on Geo-structures Stochastic Numerical Analysis on Tunnel Failure Mechanism FEM Code Development for the Tunnel Stability Analysis </div> <div style="border: 1px solid black; padding: 5px; width: 22%;"> <p>Energy-Geotechnology</p> <ul style="list-style-type: none"> Physical and Chemical Behavior of Gas Hydrate Bearing Sediment Thermal-Hydraulic-Mechanical Coupled Analysis </div> <div style="border: 1px solid black; padding: 5px; width: 22%;"> <p>Modern Geotechnics</p> <ul style="list-style-type: none"> Characterization of geomaterials with geophysical methods Application of machine learning for geotechnics Combination of IoT, Digital Twin, Building information modelling, and FEM </div> </div> <p>Carrier</p> <ul style="list-style-type: none"> INHA University, Prof. University of Nottingham (Malaysia), Assistant Professor KAIST, Civil & Environ. Eng., Ph.D. INHA University, Civil Eng., B.S. <p style="text-align: center;">Research Interests INHA University, Dept. of Civil Engineering</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Geomechanics and Engineering Lab</p> </div> <div style="text-align: right;"> <p>KI-IL SONG Ph.D. Professor of Geomechanics ksong@inha.ac.kr</p> </div> </div> | | |



Introduction of Laboratory

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|--|--|---|-----------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Hung Soo | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Department of Civil Engineering | | Major 소속전공 | Hydrological Ecology |
| Contact Information 연락처 정보 | Email | sookim@inha.ac.kr | | |
| | Telephone | 82-32-876-9783 | | |
| | Home Page | http://hydroeco.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master _2_ / Ph.D. _1_ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ● Hydrology ● Wetlands & Ecology ● Climate Change ● Floods & Droughts | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Climate Change Adaptation for Water Resources (2014~2019) | | | |
| | Methodology Development for the Estimation and Prediction of Direct and Indirect Damages/Losses from Flood and Wind Disasters (2015~2019) | | | |
| | Impact Analysis of Global Climate System on Disasters and the National Economy (2017-2022) | | | |
| Others 기타사항 | <div style="display: flex; justify-content: space-between;"> <div style="width: 23%;"> <p>Climate Change Climate Change</p> <p>Copula for Drought Analysis Under Climate Change</p> <p>Frequency Analysis Under Climate Change</p> <p>2011-2040 2041-2070 2071-2100</p> </div> <div style="width: 23%;"> <p>Wetlands & Ecology Wetlands and Ecosystem</p> <p>Hydrology and Hydraulics in Wetlands</p> <p>Evaluation of Wetland Functions and Values</p> <p>Hydrologic Function, Biogeo-chemical Function, Plant-Animal Habitat Function, Economic Value</p> </div> <div style="width: 23%;"> <p>Rainfall Radar Rainfall Radar Networking</p> <p>Quality Control and Estimation of Radar rainfall</p> <p>Flood Forecasting By Radar Rainfall</p> </div> <div style="width: 23%;"> <p>Chaos in Hydrology Fractal and Chaos</p> <p>Natural phenomena with fractal features</p> <p>Chaotic Time Series</p> <p>BDS Statistic & C-C Method</p> </div> </div> | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | NA | | |
| | Given Name | SEONHONG | | |
| Position 직급 | Associate Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Civil Engineering | | Major 소속전공 | Computational Geomechanics |
| Contact Information 연락처 정보 | Email | s.na@inha.ac.kr | | |
| | Telephone | +82-10-860-7567 | | |
| | Home Page | https://newdept.inha.ac.kr/p-sna/index.do | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D 1 |
| Research Field 연구분야 설명 | <p>Our research group specializes in computational geomechanics, multiphysics, and multiscale modeling of natural and engineering systems, with particular emphasis on coupled thermo-hydro-mechanical processes in porous media. Our research involves building and implementing computationally efficient and robust algorithms by leveraging theoretical and computational frameworks to predict how multiphase solids interact with diverse influences such as stress, deformation, heat source, chemical species, and fluid flows. In addition, our research interests encompass how material instabilities such as strain localization, soil liquefaction, damage, and fracture occur and impact across different spatial and temporal scales.</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p>Y.Guo and S. Na (2023), A computational framework based on explicit local chemical equilibrium for coupled chemo-hydro-mechanical effects on fluid-infiltrating porous media, <i>Journal of Computational Physics</i>, DOI: 10.1016/j.jcp.2023.112196.</p> <p>H. Mohammadi and S. Na (2022), A Volume Averaging FEM-Based Fracture Model for Damage Process in Cohesive-Frictional Solids, <i>International Journal of Geomechanics (ASCE)</i>, DOI: https://doi.org/10.1061/IJGNAL.GMENG-7181.</p> <p>M.M. Kebria, S. Na, and F. Yu (2022), An algorithmic framework for computational estimation of soil freezing characteristic curves, <i>International Journal for Numerical and Analytical Methods in Geomechanics</i>, https://doi.org/10.1002/nag.3356.</p> | | | |
| Others 기타사항 | <p>We have positions available for highly motivated graduate students (generally 1-2 per year) who are interested in developing novel computational models ultimately for sustainable development and resilient systems for infrastructure, energy, environment, and societal needs. If interested, please spend some time investigating the opportunities below and send your CV, transcripts and a brief statement of interest to Dr. SeonHong Na (s.na@inha.ac.kr).</p> | | | |



Introduction of Laboratory

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|---|--|--------------------------------|--|--|
| Name 성함 | Surname | WON | | |
| | Given Name | Jong-Hoon | | |
| Position 직급 | Associate Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Electrical Eng. Future Vehicle Eng. | Major 소속전공 | Autonomous Navigation | |
| Contact Information 연락처 정보 | Email | jh.won@inha.ac.kr | | |
| | Telephone | +82(0)32-860-7406 | | |
| | Home Page | Autonav.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | (How Many) Master <u> 1 </u> / Ph.D. <u> 1 </u> | |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ▪ Signal Processing, Estimation Theory and Applications ▪ Kalman Filtering, Multi-Sensor Data Fusion and Target Tracking ▪ Precise Positioning and Attitude Determination ▪ Sensor Integration (e.g. GPS/INS/DR/etc.) ▪ GNSS Receiver/Signal Design ▪ Next Generation GNSS System Design and Analysis ▪ Navigation/Communication System Applications to Next Generation Smart Vehicles | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Signal Processing & Receiver Architecture: in GNSS Handbook (eds. by O. Montenbruck and P. J. G. Teunissen eds.) Springer, 2017. (ISBN 978-3-319-42926-7) | | | |
| | Analysis of Ground Transmitter Interference Range for GPS L1 Signals in the Ground Test-bed Environment of a Navigation Satellite System IET Radar, Sonar & Navigation, 2018, DOI: 10.1049/iet-rsn.2018.5294IET Digital Library | | | |
| | A Script Hook-based Ultra-Low Cost Driving Simulator for Development of Self-Driving Algorithms, Proceedings of the ION 2019 Pacific PNT Meeting April 8 - 11, 2019, Hilton Waikiki Beach, Honolulu, Hawaii | | | |
| Others 기타사항 | <p>Required skills</p> <ul style="list-style-type: none"> - One of the followings : communication, control, software programming (Matlab, C/C++, python, etc.) <p>Please visit our web-page (http://autonav.inha.ac.kr) for more details</p> | | | |



Introduction of Laboratory

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|---|--|---------------------------------------|---|
| Name 성함 | Surname | Kim | |
| | Given Name | Kwangki | |
| Position 직급 | Assistant Professor | | Gender 성별 Male |
| Department 소속학과 | Electrical Engineering | | Major 소속전공 Control Engineering and Optimization |
| Contact Information 연락처 정보 | Email | kwangki.kim@inha.ac.kr | |
| | Telephone | +82 32 860 7397 | |
| | Home Page | http://lics.inha.ac.kr | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | 2 (PhD student only) |
| Research Field 연구분야 설명 | <ul style="list-style-type: none">○ Autonomous robot localization, path planning and control<ul style="list-style-type: none">- Visual SLAM with deep features- Deep reinforcement learning, Deep neural optimizer for control○ Automotive control systems<ul style="list-style-type: none">- Vision-based autonomous driving- Embedded model predictive control for vehicle motion control○ Power system optimization and control<ul style="list-style-type: none">- Computational methods for electric power systems- Distributed optimization and networked embedded control | | |
| | Theory | | Application |
| | Data-driven | Reinforcement Learning for Control | Eco-CAV, Path planning and control for |
| | Optimal Control | Learning and Optimization for Control | autonomous robots/vehicles |
| | Model-based | Embedded Model Predictive Control | Robot control |
| | Optimal Control | Real-Time Numerical Optimal Control | Power system control |
| | Uncertainty Quantification | Polynomial Chaos with Stochastic | Power system state estimation |
| | | Galerkin Projection Model Reduction | Power system optimization |
| | | Bayesian Inference | |
| | Vision-based Robot Localization, Planning and Control | | Autonomous aerial vehicles |
| | Learning Theory and Applications | | Intelligent control for robotics |
| | Optimization Theory and Applications | | All engineering domains |
| | IQC (Integral Quadratic Constraint) analysis and control | | Nonlinear robust control for UAV/UMV |
| | Sequential convex optimization for control policy | | Portfolio optimization |
| | Optimization (Convex optimization for control policies) | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | “Service-Oriented Real-Time Energy-Optimal Regenerative Braking Strategy for Connected and Autonomous Electrified Vehicles,” <i>IEEE Transactions on Intelligent Transportation Systems</i> , Early access, 2021. | | |
| | “Standard representation and unified stability analysis for dynamic artificial neural network models,” <i>Neural Networks</i> , Volume 98, pages 251–262, 2018. | | |
| | “Semidefinite programming approach to gaussian sequential rate-distortion trade-offs,” <i>IEEE Transactions on Automatic Control</i> , Volume 62, Issue 4, pages 1896–1910, 2017. | | |





Introduction of Laboratory

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|---|--|---|--------------------------------|---------------------------|
| Name 성함 | Surname | Kim | | |
| | Given Name | Insu | | |
| Position 직급 | Associate Professor | Gender 성별 | Male | |
| Department 소속학과 | Department of Electrical and Computer Engineering | Major 소속전공 | Electrical Engineering | |
| Contact Information 연락처 정보 | Email | insu@inha.ac.kr | | |
| | Telephone | +82-32-860-7390 | | |
| | Home Page | https://sites.google.com/view/inhapower | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D. __1__ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ✓ Development of transmission and distribution power system steady and transient state analysis algorithms (e.g., power flow, short-circuit, and harmonic analysis algorithms for AC and HVDC grids) ✓ Power system optimizations and AI techniques (e.g. reliability, optimal allocation of distributed generators, hosting capacity of renewable energy resources, deep and reinforcement learning algorithms for energy systems) ✓ Developing algorithms for combined heat and power generation | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | [22] Insu Kim, "Part 1: A New Single-Logarithmic Approximation of Carson's Ground-Return Impedances," IEEE Access, Vol. 9, pp. 103850 - 103861, July 15, 2021. DOI: 10.1109/ACCESS.2021.3097377 | | | |
| | [16] Insu Kim, "A calculation method for the short-circuit current contribution of current-control inverter-based distributed generation sources at balanced conditions," <i>Electric Power Systems Research</i> , Vol. 190, January 2021. https://doi.org/10.1016/j.epsr.2020.106839 | | | |
| | [10] Insu Kim, "Short-circuit analysis models for unbalanced inverter-based distributed generation sources and loads," <i>IEEE Transactions on Power Systems</i> , Vol. 34, No. 5, pp. 3515-3526, September 2019. | | | |
| Others 기타사항 | <p>An ideal candidate is a graduate student or postdoctoral fellow who has a good understanding and experience of the following:</p> <p>(a) power-flow algorithms such as Newton-Raphson, decoupled, Gauss-Seidel, and backward and forward sweep methods</p> <p>(b) fault analysis or short-circuit algorithms using the sequence network method</p> <p>(c) some prior experiences in programming in MATLAB and Python.</p> <p>(d) developing the algorithms in MATLAB and publishing highly qualified journal papers are also the most important aspects of the position.</p> <p>The following topics will be plus but not required:</p> <p>(a) machine learning (genetic algorithm, particle swarm optimization, and so on)</p> | | | |

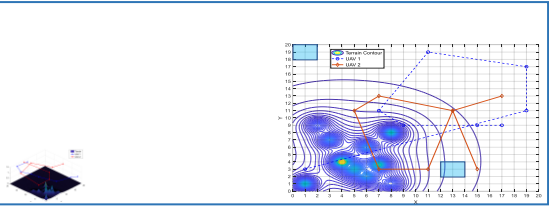
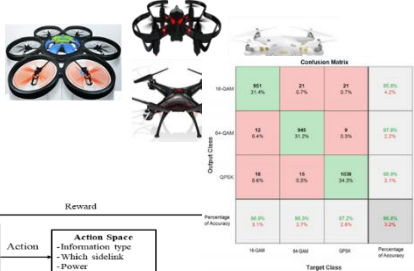
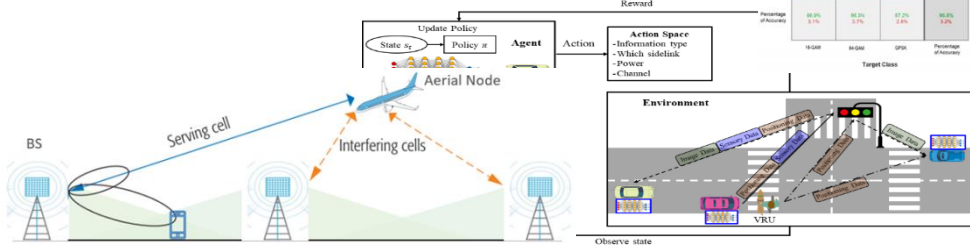


Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Daeyu | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electrical Engineering | | Major 소속전공 | IoT Sensor, Optics, Wearable devices |
| Contact Information 연락처 정보 | Email | dyukim@inha.ac.kr | | |
| | Telephone | 82-32-860-7394 | | |
| | Home Page | http://mellab.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master __2__ / Ph.D. __2__ |
| Research Field 연구분야 설명 | 1. IoT sensors for smart healthcare and smart factory applications 2. Optical imaging system with HW and control SW 3. Image analysis using deep learning algorithm 4. LIDAR sensors for autonomous vehicle | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Automatic Quantification of Anterior Lamina Cribrosa Structures in Optical Coherence Tomography Using a Two-Stage CNN Framework. Sensors. 2021 | | | |
| | Jung S, Kim DY. Noninvasive Flow Monitoring in Simple Flow Phantom Using Resistive Strain Sensors. Sensors. 2021, 21;21(6):2201. | | | |
| | Hydrophobic Paper-Based SERS Sensor Using Gold Nanoparticles Arranged on Graphene Oxide Flakes. Sensors. 2019, 11;19(24):5471. | | | |
| Others 기타사항 | <p>Our laboratory members of 3 postdocs and 3 graduate students are working on government and industrial research projects supported by National Research Foundation of Korea, BK21-Plus as well as Samsung Science & Technology Foundation.</p> <div style="display: flex; justify-content: space-around;">   </div> | | | |





Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Chang | | |
| | Given Name | KyungHi | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electronic Engineering | | Major 소속전공 | Mobile Communications |
| Contact Information 연락처 정보 | Email | khchang@inha.ac.kr | | |
| | Telephone | + 82-32-860-8422 | | |
| | Home Page | https://sites.google.com/view/mtrl-lab | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u>3</u> / Ph.D.. <u>2</u> |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - 3GPP LTE / 5G / 6G (Non-Terrestrial NW, NW Intelligence) RTT - MANET (FANET: UAV Monitoring, UAM, VANET: Autonomous Vehicle, C-V2X) - Underwater Network (Link Adaptation), Cross-layer Design - AI (ML/DL/RL) & Big Data Applications, Decision Making Support System (using Text/Speech/Sound/Image/Video), Artificial General Intelligence (AGI) | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Cooperative resource management for C-V2I communications in a dense urban environment, Vehicular Communications, 2020. 08. | | | |
| | 3D optimal surveillance trajectory planning for multiple UAVs by using particle swarm optimization with surveillance area priority, IEEE Access, 2020. 05. | | | |
| | SMART-Navigation over pilot LTE-Maritime: Deployment and co-existence with PS-LTE, IEEE Communications Magazine, 2019. 09. | | | |
| Others 기타사항 |    | | | |



Introduction of Laboratory

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|--|--|--|-----------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Deok-Hwan | | |
| Position 직급 | Full Professor | | Gender | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electrical & Computer Engineering | | Major | Electronic Engineering |
| Contact Information 연락처 정보 | Email | deokhwan@inha.ac.kr | | |
| | Telephone | (+82) 10-4660-3602 | | |
| | Home Page | http://iesl.inha.ac.kr(Artificial Intelligence&Embedded System Lab), http://aies.inha.ac.kr(Embedded System Research Center) | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (enough stipend) | | Required Manpower 필요인력 수 | (How Many) Master _1_ / Ph.D _2_ |
| Research Field 연구분야 설명 | <p>- Embedded System: Design and implementation of embedded systems, IoT Devices, Edge Devices, Smart home & Smart City with Deep Learning(AI) and Machine Learning(ML).</p> <p>- Artificial Intelligence: Deep Learning Algorithms and Applications for Embedded Devices, Robot Interface and Robot Operating Systems Platform, cloud-based software defined storage</p> <p>- Human Computer Interaction/Intelligent Robot: XVoice: Multi-Modal Voice Meta Learning, Emotion and Event/Activity Recognition for Robot Control, Sensing and Actuator</p> <p>- ADAS / Autonomous Driving: Participate in the future vehicle student training program and train people who are interested in autonomous vehicles.</p> <div style="display: flex; justify-content: space-around; align-items: center;">     </div> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | BlockChain-enabled Approach for Big Data Processing in Edge Computing, IEEE Internet of Things, 2022 (SCIE IF 9.936) | | | |
| | MS scheduler: New, scalable, and high-performance sparse AVX-2 parity encoding and decoding technique for erasure-coded cloud storage systems, Future Generation Computing Systems 2022, (SCIE IF 7.9) | | | |



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| <p>Others 기타사항</p> | <p>Currently, there are four foreign students (PhD Candidates). We provide enough stipends through BK21-Plus and other government and industrial projects.</p> <p>Required Skills:</p> <ul style="list-style-type: none">- One of the followings: software programming (Matlab, Python, C/C++ etc.) Linux, Algorithm & Data Structure, Signal Processing |
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Introduction of Laboratory

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|--|---|---|-----------------------------|--|
| Name 성함 | Surname | Choi | | |
| | Given Name | Young-kyu | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electrical & Computer Engineering | | Major 소속전공 | Computer Architecture / CAD |
| Contact Information 연락처 정보 | Email | ykc@inha.ac.kr | | |
| | Telephone | | | |
| | Home Page | https://sites.google.com/view/ykchoi | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master: 2 / PhD: 2 |
| Research Field 연구분야 설명 | <p>Acceleration of Quantum Computing Workloads (e.g. mapping, simulation) using Field-Programmable Gate Arrays (FPGAs)</p> <p>Compute Express Link (CXL) and High-Bandwidth Memory (HBM) Aware Accelerator Design</p> <p>Improving Programmability with High-Level Synthesis (HLS)</p> <p>Design Automation (CAD), Machine Learning for CAD (MLCAD), and High-Performance Computing (HPC)</p> <p>YouTube lecture series on HLS: https://youtu.be/6Jn8Vj3Hk5Y?list=PLf4U4tpbjz7x_bsG3sBEuXgVQPZfWJgW </p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p>"FPGA Acceleration of Probabilistic Sentential Decision Diagrams with High-Level Synthesis," ACM Trans. Reconf. Tech. and System (Top FPGA journal), 2023.</p> | | | |
| | <p>"HBM Connect: High-Performance HLS Interconnect for FPGA HBM," ACM/SIGDA Int. Symp. Field-Programmable Gate Arrays (Top FPGA conference), 2021.</p> | | | |
| | <p>"FLASH: Fast, Parallel, and Accurate Simulator for HLS," IEEE Trans. Computer-Aided Design of Integrated Circuits and Systems (Top CAD journal), 2020.</p> | | | |
| Others 기타사항 | <p>International students are welcomed.</p> <p>All students will be supported with research funding.</p> <p>Decent English skill required.</p> <p>Should have taken some courses related to digital system design, computer architecture, FPGAs, parallel programming, quantum computing, algorithm, or compiler.</p> | | | |



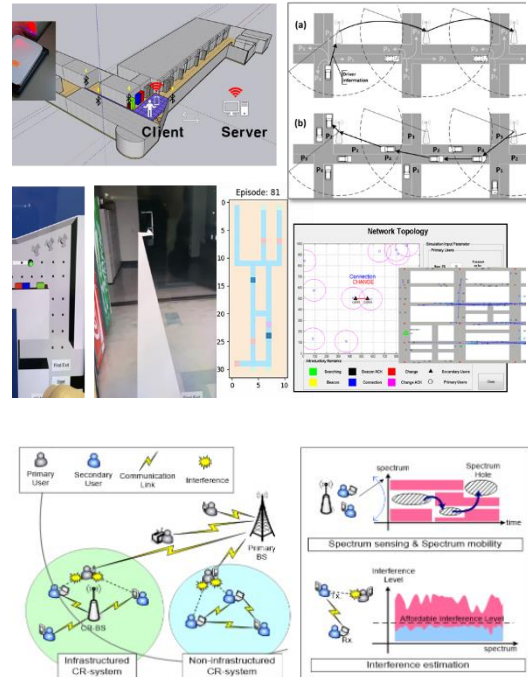
Introduction of Laboratory

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|--|--|---|--|--|
| Name 성함 | Surname | Song | | |
| | Given Name | Byung Cheol | | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Electronic Engineering | Major 소속전공 | Computer Vision, Deep Learning, Image Processing | |
| Contact Information 연락처 정보 | Email | bcsong@inha.ac.kr | | |
| | Telephone | +82-32-860-7413 | | |
| | Home Page | https://cvip.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master <u> 0 </u> / Ph.D <u> 2 </u> | |
| Research Field 연구분야 설명 | <u>Computer vision</u> - Human-computer interaction - Image-to-image translation - Object detection / segmentation <u>Deep learning / machine learning</u> - Light-weighting convolutional neural networks - Learning algorithm of deep neural networks <u>Image processing</u> - Image restoration / enhancement / segmentation | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세 건) | "Fast Filter Pruning via Coarse-to-Fine Neural Architecture Search and Contrastive Knowledge Transfer", IEEE Transactions on Neural Networks and Learning Systems (IF: 10.4), 2024 "Optimal Transport-based Identity Matching for Identity-invariant Facial Expression Recognition", Advances in Neural Information Processing Systems (NeurIPS), 2022 "Emotion-aware Multi-view Contrastive Learning for Facial Emotion Recognition", European Conference on Computer Vision (ECCV), 2022 | | | |
| Others 기타사항 |  <p>Computer Vision and Image Processing Laboratory (CVIP) conducts research on various fields in computer vision, image processing and deep learning. We have made a number of achievements over the past five years, including publications in SCIE journals and top computer science conferences. Financial support is also available by participating in on-going government/industrial research projects. For more details, please visit our website (https://cvip.inha.ac.kr).</p> | | | |



Introduction of Laboratory

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|--|--|----------------------------|--|--|
| Name | Surname | Yoo | | |
| | Given Name | Sang-Jo | | |
| Position | Professor | Gender | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Information and Communication | Major | Communication and Networking | |
| Contact Information 연락처 정보 | Email | sjyoo@inha.ac.kr | | |
| | Telephone | +83-32-860-8304 | | |
| | Home Page | http://multinet.inha.ac.kr | | |
| Monthly Stipend Provided or Not | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower | (How Many) Master <u>2</u> / Ph.D. <u>1</u> | |
| Research Field | <p>We (Multimedia Network Laboratory) mainly research the machine learning-based network technologies for wireless sensor networks (WSN), vehicular ad-hoc networks, UAV flying ad-hoc networks, and next generation cognitive radio networks. Our current research projects include:</p> <ul style="list-style-type: none"> - Wireless sensor network and Internet of Things (IoT) protocol design - AI-based IoT and UAV Networking Architecture - Machine Learning-based Networking Applications | | | |
| Career Achievements (Recent 3 ones) | <p>Q-Learning-Based Data-Aggregation-Aware Energy-Efficient Routing Protocol for Wireless Sensor Networks, IEEE ACCESS, 2021</p> <p>A Novel Energy Supply Strategy for Stable Sensor Data Delivery in Wireless Sensor Networks, IEEE Systems Journal, 2020</p> <p>PSO-based Dynamic UAV Positioning Algorithm for Sensing Information Acquisition in Wireless Sensor Networks, IEEE ACCES, 2019</p> | | | |
| Others | We are very welcoming foreign students who are really interested in machine learning, AI-based network platform development. | | | |





Introduction of Laboratory

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|--|--|---|-----------------------------|--|
| Name 성함 | Surname | Park | | |
| | Given Name | Jae-Hyeung | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Information and Communication Engineering | | Major 소속전공 | |
| Contact Information 연락처 정보 | Email | jh.park@inha.ac.kr | | |
| | Telephone | +82-32-860-7432 | | |
| | Home Page | http://3dlab.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master _1_ / Ph.D. _1_ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - Optics for Augmented Reality (AR) Displays (Head mounted displays, Near eye displays, Vehicle head up displays) - Holographic capture and displays - Computer Generated Hologram - Light field capture and displays | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | J.-H. Park, M. Askari, "Non-hogel-based computer generated hologram from light field using complex field recovery technique from Wigner distribution function," Optics Express, vol. 27, no. 3, pp. 2562-2574, (2019). | | | |
| | J.-H. Park, S.-B. Kim, "Optical see-through holographic near-eye-display with eyebox steering and depth of field control," Opt. Express vol. 26, no. 21, pp. 27076-27088 (2018). | | | |
| | S.-B. Kim and J.-H. Park, "Optical see-through Maxwellian near-to-eye display with an enlarged eyebox," Optics Letters, vol. 43, no. 4, pp. 767-770, (2018). | | | |
| Others 기타사항 | | | | |



Introduction of Laboratory

| | | | |
|--|--|---|-------------------------|
| Name 성함 | Surname | Seo | |
| | Given Name | Yeongkyo | |
| Position 직급 | Assistant Professor | Gender 성별 | Male |
| Department 소속학과 | Information and Communication Engineering | Major 소속전공 | VLSI and Circuit Design |
| Contact Information 연락처 정보 | Email | yeongkyo@inha.ac.kr | |
| | Telephone | + 82 32-860-7415 | |
| | Home Page | https://sites.google.com/view/circuits-lab | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master _1_ / Ph.D. _1_ |
| Research Field 연구분야 설명 | <p>Circuits and Systems Lab is a part of the Department of Information and Communication Engineering at Inha University, Incheon, South Korea, under the direction of Prof. Yeongkyo Seo. We focus on high performance and energy efficient custom digital circuit design by Silicon and non-Silicon technologies. Also, our research interests focus on In-Memory Computing Devices, Circuits, and Systems using CMOS and post-CMOS Memories for Neuromorphic Applications.</p> <p>Our group currently has multiple openings to hire graduate students as well as undergraduate research interns who are interested in custom digital circuit design for neuromorphic computing system. If you are interested, please send an email with your brief resume to Prof. Yeongkyo Seo (yeongkyo at inha.ac.kr)</p> | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Y. Seo, K-W. Kwon, X. Fong, and K. Roy, "High Performance and Energy-Efficient On-Chip Cache using Dual Port (1R/1W) Spin-Orbit Torque MRAM," IEEE Journal of Emerging and Selected Topics in Circuits and Systems, vol. 6, no. 3, pp. 293-304, Sep. 2016. | | |
| | Y. Seo, K-W. Kwon, and K. Roy, "Area-Efficient SOT-MRAM with a Schottky Diode," IEEE Electron Device Letters, vol. 37, no. 8, pp. 982-985, Aug. 2016. | | |
| | Y. Seo, and K. Roy, "High-Density SOT-MRAM Based on Shared Bitline Structure," IEEE Transactions on Very Large Scale Integration Systems, vol. 26, no. 8, pp. 1600-1603, Aug. 2018. | | |
| Others 기타사항 | | | |



Introduction of Laboratory

| | | | | |
|--|---|------------------|---|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Hanho | | |
| Position 직급 | Professor | Gender 성별 | ■ <input type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Information and Communication engr. | Major 소속전공 | Digital System Design, VLSI architecture design | |
| Contact Information 연락처 정보 | Email | hhlee@inha.ac.kr | | |
| | Telephone | +82-32-860-7449 | | |
| | Home Page | soc.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ <input type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master __1__ / Ph.D. __1__ |
| Research Field 연구분야 설명 | <p>Depending on the student's experience and interests, the student will start working e.g. in one of the following fields:</p> <ul style="list-style-type: none"> - Cryptography algorithm and architectures for post-quantum cryptography - Hardware cryptography architectures for Homomorphic Encryption - Hardware architecture for artificial intelligent - FPGA-based Machine Learning <p>Detailed lab information is in http://soc.inha.ac.kr.</p> <p>The research topics require either 1) excellent programming skills and comprehension (or interest) of digital signal processing, communications, computer architectures, OR 2) expertise in C/C++, Verilog HDL coding, and FPGA design.</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | "An Efficient Unified Polynomial Arithmetic Unit for CRYSTALS-Dilithium," IEEE Transactions on Circuits and Systems I: Regular Papers, Dec. 2023. | | | |
| | "Configurable Memory-Based NTT Architecture for Homomorphic Encryption," IEEE Transactions on Circuits and Systems II: Express Briefs, Oct. 2023. | | | |
| | "Area-Efficient Number Theoretic Transform Architecture for Homomorphic Encryption," IEEE Transactions on Circuits and Systems I: Regular Papers, March 2023. | | | |
| Others 기타사항 | <ul style="list-style-type: none"> • Benefits: 1) Selected candidates can get full tuition waive for Master and PhD periods. 2) Monthly support (Living cost) 3) Opportunities to attend international conferences oversea paid by research fund. | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Mun-Kyu | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | - Computer Engineering - Artificial Intelligence | | Major 소속전공 | Information Security |
| Contact Information 연락처 정보 | Email | mkleee@inha.ac.kr | | |
| | Telephone | +82-32-860-7456 | | |
| | Home Page | http://islab.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Integrated(MS+Ph.D) / Ph.D: 2 |
| Research Field 연구분야 설명 | Privacy-Preserving Applications for Blockchain (Zero Knowledge Proof) Artificial Intelligence for Security / Security for Artificial Intelligence Privacy-Preserving Data Analysis (Homomorphic / Functional Encryption) Security Protection for Smart Grid and Energy Trading Systems Implementation and Optimization of Cryptographic Algorithms Secure Authentication (Password and Biometrics) for Smart Devices | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | HETAL: Efficient Privacy-preserving Transfer Learning with Homomorphic Encryption, 40th International Conference on Machine Learning (ICML 2023), July 2023 | | | |
| | Comments on "PassBio: Privacy-Preserving User-Centric Biometric Authentication" IEEE Transactions on Information Forensics and Security, vol. 17, pp 2816-2817, August 2022 | | | |
| | Practical Privacy-Preserving Face Authentication for Smartphones Secure against Malicious Clients, IEEE Transactions on Information Forensics and Security, vol. 15, pp. 2386-2401, 2020 | | | |
| Others 기타사항 | Ongoing Research Projects - Development of cryptographic optimization and application technology for providing confidentiality on blockchains * Transaction privacy on blockchain using functional encryption * Secure transaction using zkSNARK (zero-knowledge Succinct Non-interactive Argument of Knowledge) - Development of statistical analysis algorithm and module using homomorphic encryption based on real number operation * AI and machine learning secured by cryptographic algorithms - BK21 project * Scholarship program for graduate students - IITP AI center | | | |



Introduction of Laboratory

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|---|---|------------------------------|--------------------------------|---|
| Name 성함 | Surname | LEE | | |
| | Given Name | Sang-Chul | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Computer Engineering | | Major 소속전공 | Artificial Intelligence / Computer Vision |
| Contact Information 연락처 정보 | Email | sclee@inha.ac.kr | | |
| | Telephone | +82 32 860 7442 | | |
| | Home Page | http://imageinfo.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master <u> 0 </u> / Ph.D. <u> 1 </u> / MS/Ph.D. <u> 3 </u> |
| Research Field 연구분야 설명 | <p>Our main research interest is in computer vision and artificial intelligence including:</p> <ul style="list-style-type: none"> - Medical Artificial Intelligence - Machine learning (deep learning) for vision - High-level Human-Computer interaction - Content based video processing - Applications of artificial intelligence | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | "Morphological Multi-cell Discrimination for Robust Cell Segmentation," in IEEE Access, vol. 8, pp. 49837-49847, 2020. | | | |
| | "Cell segmentation for quantitative analysis of anodized TiO2 foil", in IEEE Transactions on Industrial Informatics, 15(5), pp. 2828-2837, IEEE, 2019. | | | |
| | "Nucleus Segmentation Using Gaussian Mixture based Shape Models", in IEEE Journal of Biomedical and Health Informatics, vol. 22(1), pp. 235-243, IEEE, 2018. | | | |
| Others 기타사항 | I recruit new students seeking for MS/Ph.D. integrated degree only. For more detail, please visit our web site for more detailed research topics and publication lists. | | | |



Introduction of Laboratory

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|---|---|------------------------|--------------------------------|--|
| Name 성함 | Surname | Noh | | |
| | Given Name | YoungTae | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Computer Engineering | | Major 소속전공 | Networked and Mobile Interaction System |
| Contact Information 연락처 정보 | Email | ytnoh@inha.ac.kr | | |
| | Telephone | +32-860-7445 | | |
| | Home Page | http://nsl.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Integrated(MS+PhD) / PhD: <u>5</u> |
| Research Field 연구분야 설명 | <p align="center">[Positive Computing]</p> <p>FocusMore: The overall goal of this research topic is developing proactive distraction management systems for smartphone distraction vulnerable situations. During the research we are currently focused on following questions:</p> <ul style="list-style-type: none"> - What are the patterns of phone distraction vulnerable contexts? - Which type of DND mode is needed? - Would it be possible to automatically generate rules for DND mode? - How do users use proactive distraction management systems? <p>As an initial contribution we developed an Android mobile application to collect users' context data about their distractions.</p> <p>EasyTrack: Orchestrating Large-scale Mobile User Studies</p> <ul style="list-style-type: none"> • Human subject studies involve <ul style="list-style-type: none"> • Stress & depression tracking of students, Smartphone usage tracking studies, Physical activity and sleeping behavior tracking • Data collecting Platform: major features <ul style="list-style-type: none"> • Real-time tracking of participants' data collecting behaviors • Automatic detections and alerts of abnormal data collection • Real-time communications (interventions) with experiment/campaign participants • Challenge with the scalability: With the scales, however, it is laborious for data collectors who conduct human subject studies that especially involve mobile devices. <p align="center">[Cloud Computing]</p> <p>Elastic Kafka over Cloud: This research topic is mainly focused on traffic load balancing in the cloud. We are considering a use case of streams of data produced by IoT sensors and being sent toward the cloud for computational operations. Sometimes these data flows are drastically whimsical and cause the bottle neck in the cloud side. For better data consumption in the cloud our solution is to by making use of Kafka (most recent streaming platform) dynamically distribute the load among dynamic consumers in the cloud. As a clustering system for the cloud we are using the most recent platform by Google – Kubernetes, which showed quite good performance in running containerized applications and easy resource management.</p> | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Rhongho Jang, Seongkwang Moon, Youngtae Noh, Aziz Mohaisen and Daehun Nyang, " InstaMeasure: Instant Per-flow Detection Using Large In-DRAM Working Set of Active Flows ," IEEE ICDCS'19, to appear. | | | |
| | Youngtae Noh, Hirozumi Yamaguchi, Uichin Lee, " Infrastructure-free Collaborative Indoor Positioning Scheme for Time-critical Team Operations ," IEEE Trans. Systems, Man, and Cybernetics: Systems, 2018. | | | |
| | Rhongho Jang, DongGyu Cho, Youngtae Noh, and DaeHun Nyang, " RFlow+: An SDN-based WLAN Monitoring And Management Framework ," IEEE INFOCOM 2017, Atlanta, GA, USA, May 1-4, 2017. (Best-in-session Presentation Award) [PDF] [PPTX] | | | |



Introduction of Laboratory

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|---|--|--------------------------------|-----------------------------|--|
| Name 성함 | Surname | Han | | |
| | Given Name | Kyungsook | | |
| Position 직급 | Professor | | Gender 성별 | Position 직급 |
| Department 소속학과 | Electrical and Computer Engineering | | Major 소속전공 | Department 소속학과 |
| Contact Information 연락처 정보 | Email | khan@inha.ac.kr | | |
| | Telephone | +82-32-860-7388 | | |
| | Home Page | http://biocomputing.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Monthly Stipend Provided or Not 생활비 지급 의사 |
| Research Field 연구분야 설명 | Bioinformatics Machine learning Analyzing and visualizing bio big data | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Constructing a Cancer Patient-Specific Network Based on Second-Order Partial Correlations of Gene Expression and DNA Methylation, IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2022 (DOI 10.1109/TCBB.2022.3145796) | | | |
| | A New Approach to Deriving Prognostic Gene Pairs from Cancer Patient-specific Gene Correlation Networks, IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2021 (DOI: 10.1109/TCBB.2020.3017209). | | | |
| | Constructing Cancer Patient-Specific and Group-Specific Gene Networks with Multi-Omics Data, BMC Medical Genomics, Vol. 13, 81, 2021 (DOI: 10.1186/s12920-020-00736-7). | | | |
| Others 기타사항 | Current projects: - Discovery of cancer genes and inference of gene networks in individuals from mathematical modeling of bio big data - Deep learning for mining protein-binding motifs in nucleic acids More details are available at http://biocomputing.inha.ac.kr . | | | |



Introduction of Laboratory

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|--|--|------------------|-----------------------------|--|
| Name 성함 | Surname | Park | | |
| | Given Name | Daeyoung | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electrical and Computer Engineering | | Major 소속전공 | Information & Communication / Artificial Intelligence |
| Contact Information 연락처 정보 | Email | dpark@inha.ac.kr | | |
| | Telephone | 032-860-8376 | | |
| | Home Page | spml.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master __1__ / Ph.D __1__ |
| Research Field 연구분야 설명 | Machine Learning / Optimization Large Scale Optimization Federated Learning Data-driven Signal Processing Algorithms Signal Processing for Wireless Communications MIMO Systems Sparsity Aware Signal Processing AI-based Communication System Design | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | "Beamforming Vector Design and Device Selection in Over-the-Air Federated Learning," <i>IEEE Transactions on Wireless Communications</i> , 2023. | | | |
| | "Joint Beamforming and Learning Rate Optimization for Over-the-Air Federated Learning," <i>IEEE Transactions on Vehicular Technology</i> , 2023. | | | |
| | "Learnable MIMO Detection Networks based on Inexact ADMM," <i>IEEE Transactions on Wireless Communications</i> , 2021. | | | |
| Others 기타사항 | <p>We are looking for an excellent Master/PhD student in the area of signal processing wireless communication, and machine learning.</p> <p>Requirements: Students require excellent mathematical skills and extensive C/Matlab/Python programming expertise.</p> <p>The successful candidate needs to have a BS degree in Electrical/Computer Engineering or in a related discipline with high GPA.</p> | | | |



Introduction of Laboratory

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|---|--|---|-----------------------------|--|
| Name 성함 | Surname | Jo | | |
| | Given Name | Geun-Sik | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Electrical and Computer Engineering | | Major 소속전공 | |
| Contact Information 연락처 정보 | Email | gsjo@inha.ac.kr | | |
| | Telephone | +82-32-860-7447 | | |
| | Home Page | http://ailab.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 3 </u> / Ph.D.. <u> 2 </u> |
| Research Field 연구분야 설명 | Intelligent Augmented Reality Artificial Intelligence based Content Creation Machine/Deep Learning (Object Tracking, Facial Emotion Recognition, etc.) CSP (Constraint Satisfaction Problems) | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | "RSINet: Rotation-Scale Invariant Network for Online Visual Tracking", ICPR 2020 (Top-tier Conference) | | | |
| | "Robust visual tracking based on global-and-local search with confidence reliability estimation", Neurocomputing, 2019 (SCI-E Journal, Impact Factor: 4.438) | | | |
| | "Visual Tracking Based on a Unified Tracking-and-Detection Framework with Spatial-Temporal Consistency Filtering", Computers & Electrical Engineering, 2019 (SCI-E Journal, Impact Factor: 2.663) | | | |
| Others 기타사항 | <p>All graduates accepted for our AI Lab will be financially supported by the government grants and other research grants.</p> <p>The main projects of our laboratory are as below. Artificial Intelligence-based Content Creation Project: We research artificial intelligence-based methods to understand video content such as movies. Various datasets collected, and based on analyzed information and deep learning algorithms, new video content is created automatically.</p> <p>XR for Aircraft Maintenance Training/Education: An aircraft is a complex machine made up of numerous parts, and traditionally, mechanics need to retrieve and organize various manuals each time to perform the maintenance process. To eliminate the high cognitive load of engineers during the operation, we research methods to innovate aircraft maintenance paper-based manuals to knowledge and visualize content using augmented reality.</p> | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Chang Gyun | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Environmental Engineering Program in Environmental and Polymer Engineering | | Major 소속전공 | Environmental Engineering |
| Contact Information 연락처 정보 | Email | cgk@inha.ac.kr | | |
| | Telephone | +82 32 860 7561 | | |
| | Home Page | http://whs.inha.ac.kr/~cgk/intro.html | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u>3</u> / Ph.D. <u> </u> |
| Research Field 연구분야 설명 | <ol style="list-style-type: none"> Microplastic – Biochemical degradation/treatment <ul style="list-style-type: none"> - Assessment of biodegradability of microplastics, pharmaceuticals, antibiotics in water/soil environment. - Development of advanced oxidation process (AOP) for enhancing the biodegradability of microplastics, pharmaceuticals, antibiotics. Environmental monitoring of hazardous pollutants <ul style="list-style-type: none"> - Development of a method for pretreatment and identification of microplastics in the natural environment. - Monitoring and management of extraneous bacteria, microplastics, carcinogens, POPs and virus in the coast area - Biological soil remediation – Acid neutralization and heavy metal adsorption Methane gas production following the reaction between carbon dioxide and hydrogen | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | S.Y. Park; Y.S. Choi; S.Y. Park; C.G. Kim; "A case study on the correlation between radon and multiple geophysicochemical properties of soils in G island, Korea, and effects on the bacterial metabolic behaviors", <i>Journal of Environmental Radioactivity</i> , 222, 106336 (2020). | | | |
| | S.Y. Park; C.G. Kim; "Biodegradation of micro-polyethylene particles by bacterial colonization of a mixed microbial consortium isolated from a landfill site", <i>Chemosphere</i> , 222, 527-533 (2019). | | | |
| | S.Y. Park; C.G. Kim; "A comparative study of three different viability tests for chemically or thermally inactivated <i>Escherichia coli</i> ", <i>Environmental Engineering Research</i> , 23(3), 282-287 (2018) | | | |
| Others 기타사항 | Prospering Vietnamese students | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Jeonghwan | | |
| Position 직급 | Professor | | Gender 성별 | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Environmental Engineering | | Major 소속전공 | Membrane technology for water/wastewater treatment and resource recovery |
| Contact Information 연락처 정보 | Email | jeonghwankim@inha.ac.kr | | |
| | Telephone | 010-4020-1446, 032-860-7502 | | |
| | Home Page | http://whs.inha.ac.kr/~semt/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master <u> 1 </u> / Ph.D. <u> 2 </u> |
| Research Field 연구분야 설명 | Research interests in Sustainable Environmental Membrane Technology (SEMT) laboratory at INHA University emphasize fundamental aspects of membrane technology and its applications as laboratory and pilot-scaled levels. We have studied membrane bioreactor (MBR) especially for energy recovery and developed hybrid based-based process for wastewater reclamations extensively. Recently, we have launched national projects dealing with new anaerobic membrane bioreactor and catalytic membrane system using reactive membrane materials for providing excellent effluent quality and antifouling functionality as well as resource recovery from water and wastewater. | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | M. Kim, T. Lam, G. A. Tan, P. Lee and J. Kim, Use of polymeric scouring agent as fluidized media in anaerobic fluidized bed membrane bioreactor for wastewater treatment: System performance and microbial community, 606, 118121, <i>Journal of Membrane Science</i> , 2020 | | | |
| | S. Chang, R. Ahmad, D. Kwon and J. Kim, Hybrid ceramic membrane reactor combined with fluidized bed adsorbents and scouring agents for hazardous metal-plating wastewater treatment, <i>Journal of Hazardous Materials</i> , 388, 121777, 2020 | | | |
| | D. Kwon, S. Kwon, J. Kim and J. Lee, Feasibility of the highly-permselective forward osmosis membrane process for the post-treatment of the anaerobic fluidized bed bioreactor effluent, <i>Desalination</i> , 485, 114451, 2020 | | | |
| Others 기타사항 | Importance and strong point of our researches in SEMT are interdisciplinary collaborations with many renowned research groups around the world. We have undergone international collaboration projects with various, leading research institutes in membrane technology such as University of Leuven (Belgium), University of Montpellier (France) and UCLA/Stanford University (USA). We have now been extending our global research network to The University of Hong Kong and Imperial College at London actively. New international project supported by Korea Research Foundation dealing with anaerobic membrane bioreactor was just launched with Denmark Institute of Technology. Students who are interested in joining our SEMT research group should have BS or MS degree in Environmental Engineering or related field, for example, Chemical Engineering, Materials Science and Engineering, Physics, Biology, Mathematics or other related fields. Official language scores may be required. Most importantly, anyone who is passionate and has highly research motivations to study membrane technology are always welcomed. Please contact with me if you have any inquiry on our research works and regarding the position as graduate level in our SEMT laboratory. | | | |



Introduction of Laboratory

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|---|--|---|---|
| Name 성함 | Surname | Lee | |
| | Given Name | Handol | |
| Position 직급 | Assistant Professor | Gender 성별 | Male |
| Department 소속학과 | Environmental Engineering | Major 소속전공 | Environmental Engineering (air pollution, aerosol technology, particulate matter control) |
| Contact Information 연락처 정보 | Email | leehd@inha.ac.kr | |
| | Telephone | +82-32-860-7504 | |
| | Home Page | http://pccl.inha.ac.kr/ | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master: 2 / Ph.D.: 1 |
| Research Field 연구분야 설명 | <p>1. Indoor Air Quality Indoor air quality research is related to the development of air cleaning systems including corona discharging and electrospun nanofiber.</p> <p>2. Aerosol Instrumentation Aerosol instrumentation research focuses on the development of aerosol instruments for atmospheric particle measurements, especially the number concentration and the size distribution of airborne particles ranging from 5 nm to 10 μm. The developed aerosol instruments are actively used in various outdoor field measurements.</p> <p>3. Air Pollution Air pollution research focuses on the effects of atmospheric particles on air pollution and climate change. Field measurements are conducted using the self-developed aerosol instruments.</p> <p>4. Filtration Filtration research is supported by and collaborated with an industrial consortium, the Center for Filtration Research (CFR) consisting of international companies. The consortium is held by Particle Technology Laboratory at the University of Minnesota.</p> <p>5. Particle Transport The research covers particle behavior analysis using the computational fluid dynamics (CFD) simulations. The numerical simulation is highly involved in most of the research fields in PCCL.</p> | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Development of a new nanoparticle sizer equipped with a 12-channel multi-port differential mobility analyzer and multi-condensation particle counters, ATMOSPHERIC MEASUREMENT TECHNIQUES, 13(3), 1551-1562, 2020 | | |
| | Numerical investigation of nanoparticle deposition location and pattern on a sharp-bent tube wall, INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, 164, 120534, 2021 | | |
| | Application of an aerosol electrical mobility spectrum analyzer: Charged-particle polarity ratio measurement in the Antarctic and Arctic regions, JOURNAL OF ENVIRONMENTAL SCIENCES, 105, 81-89, 2021 | | |
| Others 기타사항 | Our lab welcomes international students for MS and PhD programs. We are open to any questions. Do not hesitate to send an email to leehd@inha.ac.kr for more information on our lab. | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Jeon | | |
| | Given Name | Ki-Joon | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Environmental engineering | | Major 소속전공 | Environmental engineering |
| Contact Information 연락처 정보 | Email | inhafeetlab@gmail.com | | |
| | Telephone | +821057211195 (Vietnamese, English available) | | |
| | Home Page | https://sites.google.com/view/inhaenvironment2/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Integrated (Ms+PhD) / PhD: 2 |
| Research Field 연구분야 설명 | <p>Atmospheric</p> <p>Air quality measurements</p> <p>Particles emission characterization and toxicity test: <i>in-vivo</i> and <i>in-vitro</i> test</p> <p>Artificial PM generation</p> <p>Nanomaterial</p> <p>Nanomaterial engineering to solve environmental issues:</p> <p>Enhance efficiency of hydrogen energy production by utilizing electrocatalyst</p> <p>Development of nano-sized transistor for toxic gas sensor</p> | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Structural transformations of hydrogen and sulfur annealed Pt-based Chalcogenides electrocatalysis. Applied Surface Science, 2022 | | | |
| | Self-healing graphene templated platinum nickel oxide heterostructures for overall water splitting. ACS nano, 2022 | | | |
| | Quantification of tire wear particles in road dust from industrial and residential area in Seoul, Korea. <i>Science of The Total Environment</i> , 2021 | | | |
| | Traffic-related particulate matter aggravates ocular allergic inflammation by mediating dendritic cell maturation. Journal of Toxicology and Environmental Health, 2021 | | | |



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|------------------------|--|
| | <p>Pd nanocluster/Monolayer MoS₂ heterojunctions for Light induced room temperature hydrogen sensing. ACS applied materials & Interfaces, 2021</p> |
| <p>Others 기타사항</p> | <div data-bbox="486 392 1460 784"> </div> <div data-bbox="486 795 1460 1108"> </div> <p style="text-align: center;">2021 KAPAR and KOSAE</p> |



Introduction of Laboratory

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|---|---|--|--------------------------------|---|
| Name 성함 | Surname | Park | | |
| | Given Name | Kwan-Dong | | |
| Position 직급 | Professor | | Gender 성별 | ▪ Male □ Female |
| Department 소속학과 | Geoinformatic Engineering | | Major 소속전공 | GPS, Autonomous Driving |
| Contact Information 연락처 정보 | Email | kdpark@inha.ac.kr | | |
| | Telephone | +82-32-873-4310 | | |
| | Home Page | https://www.gps2u.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ▪ Yes □ No | | Required Manpower 필요인력 수 | (How Many) Master __2__ / Ph.D __2__ |
| Research Field 연구분야 설명 | ✓ High-precision GPS/GNSS data processing ✓ GPS sensor development for autonomous driving Geodesy and geophysical GPS | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | The school laboratory's name is "SNL", which stands for Satellite Navigation Laboratory. | | | |
| | The professor has founded a startup focusing on GPS/GNSS-sensor development for autonomous driving and its name is "Precise Positioning Solution Inc.", whose home page is https://www.ppsoln.com . | | | |
| | The professor and graduate students have published numerous GPS/GNSS-related articles in the international and Korean journals | | | |
| Others 기타사항 | ✓ All the laboratory members or graduate students are working on government or industrial research projects, and thus are being financially supported by the project money. ✓ Master's students and doctoral students get up to 2,200,000 and 3,000,000 Korean Wons per month, respectively. | | | |



Introduction of Laboratory

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|---|---|---|--|
| Name 성함 | Surname | Lee | |
| | Given Name | Choul-Gyun | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Biological Engineering | Major 소속전공 | Biological Engineering |
| Contact Information 연락처 정보 | Email | leecg@inha.ac.kr | |
| | Telephone | 82-32-860-8997 | |
| | Home Page | https://p-leecg.inha.ac.kr/p-leecg/index.do | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master __1__ or Ph.D __1__ |
| Research Field 연구분야 설명 | <p>We are working on various projects that target to produce microalgae-based products from upstream to downstream and from micro-scale to pilot-scale.</p> <ul style="list-style-type: none"> ● Systems Biology <ul style="list-style-type: none"> - Metabolic engineering of microalgae with <i>in-silico</i> modeling of metabolic pathways and molecular biology tools to produce new valuable compounds or enhance their productivity - Synthetic biology research for development of BIO-fertilizer ● Microalgal Cell Culture Technology <ul style="list-style-type: none"> - Development of large-scale culture systems based on semi-permeable materials technology for sustainable production of microalgal biomass - Photobioreactor engineering and optimization of cultivation parameters (temperature, light supply, media, etc.) to enhance productivities of biomass and valuable biochemicals such as lipids and pigments ● Biorefinery <ul style="list-style-type: none"> - Development of extraction and conversion technologies to produce various products, such as biofuels, animal feeds, and fertilizers, from microalgal biomass | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Photosynthetic production of biodiesel in <i>Synechocystis</i> sp. PCC6803 transformed with insect or plant fatty acid methyltransferase (2021) | | |
| | Enhancing microalgal biomass productivity in floating photobioreactors with semi-permeable membranes grafted with 4-hydroxyphenethyl bromide (2020) | | |
| | Method for mass culturing photosynthetic microalgae by additionally supplying environmental water. US Patent 10,174,282 (2019) | | |
| Others 기타사항 | <p>We have many types of microalgal culture systems in various scales, cutting-edge analytical equipment, and downstream process reactors that students can learn to use and operate them for research.</p> <ul style="list-style-type: none"> - Culture systems: Bubble columns, continuously stirred tank reactors, flat-panel photobioreactors, raceway ponds, ocean floating ponds <p>Analytical equipment: HPLC, GC-MS, Coulter Counter, Cellometer, TOC analyzer, water analyzer, phase-contrast microscope</p> | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Yang | | |
| | Given Name | Yun Jung | | |
| Position 직급 | Assistant professor | | Gender 성별 | <input type="checkbox"/> Male <input checked="" type="checkbox"/> Female |
| Department 소속학과 | Biological engineering | | Major 소속전공 | Protein engineering, Tissue engineering, Scaffold design |
| Contact Information 연락처 정보 | Email | yj.yang@inha.ac.kr | | |
| | Telephone | +82-32-860-7512 | | |
| | Home Page | http://yanglab.creatorlink.net/INTRO | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D. <u> 1 </u> |
| Research Field 연구분야 설명 | <p>Our lab aims to develop and improve the properties of biomaterials based on detailed understanding of biological systems. Genetic or molecular engineering of biopolymers facilitates the flow of biological evolution, and enables the amplification of specific abilities. Re-designing biomolecules for changing affinity of antibodies, controlling self-assembly of biopolymers for physically/mechanically robust biomaterials, and hybridizing organic-inorganic materials for reinforced materials are good examples. The research on tuning the function and properties of biomaterials for specific purposes will solve the problems faced by humankind in medical, pharmaceutical, agricultural and environmental fields.</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p>Y.J. Yang, D.J. Mai, S. Li, M.A. Morris, and B.D Olsen, "Tuning Selective Transport of Biomolecules Through Site-Mutated Nucleoporin-Like Protein (NLP) Hydrogels", <i>Biomacromolecules</i>, 22(2):289-298, 2021 (I.F.: 5.738, JCR%: 6.9)</p> | | | |
| | <p>T.Y. Park*, Y.J. Yang*, D.H. Ha*, D. Cho, and H.J Cha, "Marine-derived Natural Polymer-based Bioprinting Ink for Biocompatible, Durable, and Controllable 3D Constructs", <i>Biofabrication</i>, 11(035001):1-13, 2019 (I.F.: 6.838, JCR%: 3.85)</p> | | | |
| | <p>Y.J. Yang, C.S. Kim, B.H. Choi and H.J. Cha, "Mechanically Durable and Biologically Favorable Protein Hydrogel based on Elastic Silklike Protein derived from Sea Anemone", <i>Biomacromolecules</i> 16(12):3819-3826, 2015 (I.F.: 5.738, JCR%: 6.9)</p> | | | |
| Others 기타사항 | <p>✓ The applicant who can speak Korean or who is willing to study Korean is preferred (to mingle with lab members).</p> <p>✓ Interested individuals should contact Prof. Yun Jung Yang with an electronic copy of their CV.</p> | | | |



Introduction of Laboratory

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|---|---|-----------------------|--------------------------------|--|
| Name 성함 | Surname | Jeon | | |
| | Given Name | Tae-Joon | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Biological Engineering | | Major 소속전공 | Nanobiotechnology |
| Contact Information 연락처 정보 | Email | tjjeon@inha.ac.kr | | |
| | Telephone | +82-32-860-7511 | | |
| | Home Page | http://bsl.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D __2__ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ● Biosensors/Biochips – Virus/Pathogen Biosensors, Molecular Diagnosis ● Cells/Tissues/Organs-on-a-Chip ● Nanobiotechnology – Nanomedicine, Drug Delivery Systems ● Biomimetic Systems – Liposomes, Artificial Cells, Cosmetics | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Multicomponent-loaded vesosomal drug carrier for controlled and sustained compound release, Biomacromolecules 2023 | | | |
| | Aptamer-conjugated polydiacetylene colorimetric paper chip for the detection of bacillus thuringiensis spores, Sensors 2020 | | | |
| | Biomimetic membranes as potential tools for water purification: Preceding and future avenues, Desalination 2019 | | | |
| Others 기타사항 | <div style="text-align: center;"> <h2>Biohybrid Systems Lab (BSL)</h2> <h3>"Diversity" & "Multidisciplinary"</h3> </div> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <p>Virus / Pathogen Biosensors</p> <p>Disease Diagnosis</p> <p>Tissues/Organs-on-Chips</p> <p>Microfluidic Studies of <i>C. elegans</i></p> <p>Biophysical Studies w/ Biomimetic Membranes</p> <p>Drug/Ion Channel Screening Platform</p> <p>Membrane Biosensors</p> <p>Biomimetic Membrane Platform</p> </div> <div style="width: 50%;"> <p>김대교씨 (Feat. 이자현 디지털 종브나)</p> <p>이복근 (Feat. 불림불림 루치)</p> <p>Ahmed (Feat. Flamingo)</p> <p>Wang Jing (Feat. GENIUS)</p> <p>Piao Hailing (Feat. Soprano)</p> <p>김광현님 (Feat. King's man)</p> <p>양사상씨 (Feat. 킹스 맨스 맨)</p> <p>류왕고님 (Feat. 이리프리스 러서)</p> <p>강현숙님 (Feat. 밍글)</p> <p>최수백님 (Feat. 인비타)</p> <p>윤모씨 (Feat. Worm hand)</p> <p>2015.5.28 THU - SH</p> </div> </div> <p style="text-align: center;">Visit our webpages @ http://BSL.inha.ac.kr</p> | | | |



Introduction of Laboratory

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|---|---|--|---------------------------------|
| Name 성함 | Surname | Kim | |
| | Given Name | Minsik | |
| Position 직급 | Assistant Professor | Gender 성별 | Male |
| Department 소속학과 | Biological Engineering | Major 소속전공 | Biological Engineering |
| Contact Information 연락처 정보 | Email | minsik.kim@inha.ac.kr | |
| | Telephone | +82-32-860-7515 | |
| | Home Page | bagel.inha.ac.kr | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master <u>1</u> / Ph.D <u>1</u> |
| Research Field 연구분야 설명 | 1. Bioprocess optimization for biofuel production from microalgae 2. Techno-economic assessment of developed processes 3. Development of analysis pipeline of metagenomic sequencing data 4. Wastewater treatment | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Development of an integrated biomass refinery process for whole cell biomass utilization of <i>Chlorella</i> sp. ABC-001, Chemical Engineering Journal, 2023 | | |
| | Extra benefit of microalgae in raw piggy wastewater treatment: pathogen reduction, Microbiome, 2022 | | |
| | Heterotrophic cultivation of <i>Ettlia</i> sp. based on sequential hydrolysis of Helianthus tuberosus and algal residue, Energy Conversion and Management, 2020 | | |
| Others 기타사항 | <div>  <h2>Bioprocess Analytics and Genomics Engineering Lab</h2> <div>  <p>Minsik Kim, Ph. D. Dept. of Biological Engineering, Inha University</p> <p>Research interests Renewability; Bioprocess optimization; Process simulation; Metagenomics</p> <p>Education Ph.D., KAIST, 2016 – 2020 M.S., KAIST, 2014 – 2016 B.S., KAIST, 2009 – 2014</p> <p>Postdoctoral training Research Fellow, MGK/HMS, 2021 -2023 Postdoctoral Researcher, KRIBB, 2020 – 2021</p> </div> <div> <p>Increasing renewability & health impact of bioprocesses via</p>  <p>Skill sets of BAGEL: Metagenomics analysis (developing analysis pipelines of amplicon & WGS data) Statistical optimization tools (linear and quadratic multivariate models) Techno-economic assessment (SuperPro Designer) More information at http://bagel.inha.ac.kr</p> </div> <div> <p>statistical optimization,</p>  <p>process intensification,</p>  <p>process simulation,</p>  <p>and bioinformatics</p>  </div> </div> | | |



Introduction of Laboratory

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|---|--|---|-------------------------------|
| Name 성함 | Surname | Lee | |
| | Given Name | Jeong-Hwan | |
| Position 직급 | Assistant Professor | Gender 성별 | Male |
| Department 소속학과 | Materials Science & Engineering | Major 소속전공 | Organic semiconductor devices |
| Contact Information 연락처 정보 | Email | jeong-hwan.lee@inha.ac.kr | |
| | Telephone | +82-32-860-7525 | |
| | Home Page | https://sites.google.com/view/aolinha/ | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master ____ / Ph.D. __2__ |
| Research Field 연구분야 설명 | 1. Optoelectronic Materials and Devices - Hybrid (organic + inorganic) semiconductor devices - Optoelectronic devices such as Light-emitting diodes (LED), Photovoltaic (PV), Thin Film Transistor (TFT), Sensor and detector, Flexible optoelectronic devices 2. Optical and Electrical Characterization of semiconductor devices - Recombination and emission mechanism in semiconductor devices. - Electrical and optical simulation of organic semiconductor devices | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Outstanding Young Faculty Awards 2020, Inha University | | |
| | Small 15, 1900135 (2019) | | |
| | Advanced Electronic Materials 5, 1800437 (2019) | | |
| Others 기타사항 | ■ Ongoing Research Projects (Funding) 1. PBL oriented semiconductor equipment engineer recruits (POSEER), 2019~2024 2. PSF based blue organic light-emitting diodes with efficiency over 18%, 2019~2023 3. Low-dimensional perovskite materials and opto-electric device laboratory, 2020~2023 4. Development of OLED pixel-forming technology by photolithographic patterning method 2020~2024 5. Boosting the efficiency of perovskite light-emitting diodes by controlling the ligand of perovskite quantum dots coupled by optical simulation 2020~2021 6. Characterization of anode work-function depending on the pretreatment process 2020~2022 | | |



Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | CHOI | | |
| | Given Name | RINO | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Materials Science and Engineering | | Major 소속전공 | Materials Science and Engineering |
| Contact Information 연락처 정보 | Email | rino.choi@inha.ac.kr | | |
| | Telephone | +82 32 860 7525 | | |
| | Home Page | https://sites.google.com/view/choisinha/home | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u>6</u> / Ph.D. <u>2</u> |
| Research Field 연구분야 설명 | <p>CMOS Applications</p> <ul style="list-style-type: none"> ■ Monolithic 3D Integration Circuit: utilizing Laser and Microwave Annealing for the low-temperature process to achieve high performance for the upper-layer device while preventing deterioration of existed layer. ■ Low-temperature process: Microwave Annealing for silicide formation and dopant activation for low-temperature process in comparison with traditional annealing methods. ■ Device Reliability: reliability assessments such as BTI, TDDDB, and HCI for device analysis to guarantee a 10-year lifetime. <p>Memory Applications:</p> <ul style="list-style-type: none"> ■ Ferroelectric devices: HZO-based ferroelectric thin film fabrication utilizing ALD, RF Sputtering, and Solution processes. ■ Resistive Random Access Memory (RRAM): fabrication and characterization of ReRAM devices using CMOS technology compatible materials. <p>Metal-Oxide Thin-Film Transistors:</p> <ul style="list-style-type: none"> ■ IGZO TFTs: enhance the device mobility and reliability by passivating surface and defects using SAM treatment and hydrogen doping. ■ Indium Zinc Oxide (IZO): thin-film electrical properties improvement and low-temperature crystallization through alkali metal doping. ■ Oxide Semiconductor: low-temperature crystallization utilizing laser heat treatment. ■ MGFET Fabrication: solution for new sensor generation. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p><u>Low-temperature dopant activation using nanosecond ultra-violet laser annealing for monolithic 3D integration</u> JH Kim, HM Ji, MC Nguyen, AHT Nguyen, SW Kim, JY Baek, J Kim, ...Thin Solid Films 735 (2021) 138864</p> | | | |
| | <p><u>Wakeup-free and Endurance-robust Ferroelectric Field-Effect Transistor Memory Using High Pressure Annealing</u> MC Nguyen, S Kim, K Lee, JY Yim, R Choi, D Kwon, IEEE Electron Device Letters, Vol. 42, No. 9, September 2021</p> | | | |
| | <p><u>Electrical characterization of gate stack charge traps in floating body gate-all-around field-effect-transistors</u> MC Nguyen, AHT Nguyen, J Yim, AD Nguyen, M Kim, J Kim, J Beak, ...Journal of Vacuum Science & Technology B 39, 032203 (2021).</p> | | | |
| Others 기타사항 | | | | |



Introduction of Laboratory

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|---|--|-----------------------------|--|--|
| Name 성함 | Surname | Hahm | | |
| | Given Name | Myung Gwan | | |
| Position 직급 | Associate Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Materials Science and Engineering | Major 소속전공 | Materials Science and Engineering | |
| Contact Information 연락처 정보 | Email | mghahm@inha.ac.kr | | |
| | Telephone | +82-32-860-7524 | | |
| | Home Page | http://qnl.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master ____ / Ph.D __1__ | |
| Research Field 연구분야 설명 | The research of QNM Lab focuses on investigating new synthetic routes for low-dimensional nanomaterials and their diverse futuristic applications. We are interested in sp ² graphitic structures such as carbon nanotubes, graphene and nanostructured architectures and atomic-layered transition metal dichalcogenides such as MoS ₂ , MoSe ₂ , WS ₂ , WSe ₂ , NbSe ₂ , etc. and study underlying fundamental science including their low-temperature behaviors. We also develop diverse futuristic applications such as flexible/transparent electronics, sensors, and energy storage devices. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Catalyst-free Synthesis of sub-5nm Silicon Nanowire Arrays with Massive Lattice Contraction and Wide bandgap, Nature Communications, 13, 3467 (2022) | | | |
| | Robust, Ultrasooth Fluorinated Lithium Metal Interphase Feasible via Lithiophilic Graphene Quantum Dots for Dendrite-Less Batteries, Small, 18, 2200919 (2022) | | | |
| | Visualizing Line Defects in non-van der Waals Bi ₂ O ₂ Se using Raman Spectroscopy, ACS Nano, 16, 3637 (2022) | | | |
| Others 기타사항 | <p>All graduates accepted for our QNM Lab will be financially supported by the government grants and other research grants.</p> <p>The main projects of our laboratory are 1) Synthesis and 3D architecturing of quantum nanomaterials, 2) Controlled tailoring of atomic bonding structure of nanomaterials, 3) Developments of diverse futuristic applications.</p> | | | |



Introduction of Laboratory

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|--|--|-----------------------------|--|--|
| Name 성함 | Surname | Hwang | | |
| | Given Name | Haejin | | |
| Position 직급 | Professor | Gender 성별 | ■ Male □ Female | |
| Department 소속학과 | Materials Science and Engineering | Major 소속전공 | Materials Science and Engineering | |
| Contact Information 연락처 정보 | Email | hjhwang@inha.ac.kr | | |
| | Telephone | +82-32-860-7521 | | |
| | Home Page | | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D. <u> 1 </u> | |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ● Synthesis and evaluation of oxide and sulfide solid electrolytes for all-solid-state lithium-ion batteries ● Electrode and catalyst design for next generation solid oxide fuel cells ● Synthesis of ultra-porous hydrophobic or hydrophilic silica aerogel ● Fabrication of silica aerogel-based nanocomposite polymers ● Novel dielectric materials for X9R MLCC | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Fabrication and electrochemical properties of $\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7}(\text{PO}_4)_3$ solid electrolytes by sol-gel method, Appl. Surf. Sci., 473 (2019) 622 | | | |
| | Fabrication of a regenerable Ni supported NiO-MgO catalyst for methane steam reforming by exsolution, J. Power Sources, 397 (2018) 318 | | | |
| | Fabrication of silica aerogel composite blankets from an aqueous silica aerogel slurry, Ceram. Inter., 44 (2018) 2204 | | | |
| Others 기타사항 | <p>Our laboratory is working on four research projects; three are supported by government (NRF Korea) and one by a private company.</p> <p>1) Development of composite solid electrolyte for Li-S, Li-air, and all-solid-state batteries of energy storage systems.</p> <p>2) Development of hydrophobic and hydrophilic silica aerogel powder</p> <p>3) Synthesis of bismuth sodium titanate perovskite nano powder for X9R MLCC application</p> <p>4) Next generation electrode materials for load-proof SOFC.</p> <p>A monthly stipend + incentive + TA or RA scholarship will be provided.</p> | | | |



Introduction of Laboratory

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|---|--|--|--------------------------------|----------------------------|
| Name 성함 | Surname | Kim | | |
| | Given Name | Gi-Woo | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Mechanical Engineering | | Major 소속전공 | Control, Measurement |
| Contact Information 연락처 정보 | Email | gwkim@inha.ac.kr | | |
| | Telephone | +82-32-860-7313 | | |
| | Home Page | http://csml.inha.ac.kr/ (Control Systems and Mechatronics Lab) | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master __1__ / Ph.D. __1__ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> • Data-Driven Mechatronics : Machine Learning, Measurement, and Control • Vehicular Electronics and Smart Mobility • Piezophotonic Sensors Based on Mechanoluminescent Particles • Flexible Optoelectronic Applications for Internet of Things (IoT) • A Class of New Smart Materials for Sensors and Actuators | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Sang-Hyun Park, Dong-Hoon Lee, Sang-Eui Lee, and Gi-Woo Kim*, "Kalman filter-based loading rate-dependent hysteresis compensation of flexoelectric torsional responses in polyvinylidene fluoride films for shaft torque sensors", Mechanical Systems and Signal Processing 147 (2021) 107112 | | | |
| | Yooil Kim, Gwang-Yong Jung, Jung-Sik Oh and Gi-Woo Kim*, "Dual Optical Signal-based Intraocular Pressure-sensing Principle Using Pressure-sensitive Mechanoluminescent ZnS:Cu/PDMS Soft Composite", Scientific Reports (2019) 9:15215 | | | |
| | Yooil Kim, Ji-Sik Kim, and Gi-Woo Kim, "A Novel Frequency Selectivity Approach Based on Travelling Wave Propagation in Mechanoluminescence Basilar Membrane for Artificial Cochlea", Scientific Reports (IF: 4.259) 8, 12023, 2018 | | | |
| Others 기타사항 | Google Scholar https://scholar.google.com/citations?user=xyK3WQcAAAAJ&hl=ko ResearchGate https://www.researchgate.net/profile/Gi_Woo_Kim ORCID: https://orcid.org/0000-0003-4625-0382 | | | |



Introduction of Laboratory

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|---|---|-----------------------------|--|--|
| Name 성함 | Surname | Moon | | |
| | Given Name | Seoksu | | |
| Position 직급 | Associate Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Mechanical Engineering | Major 소속전공 | Thermodynamics & Fluid Mechanics | |
| Contact Information 연락처 정보 | Email | ss.moon@inha.ac.kr | | |
| | Telephone | +82-32-860-7378 | | |
| | Home Page | http://pesl.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D <u> 1 </u> | |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> ● Analysis and development of energy conversion systems (automotive & marine engines, gas turbines, combustors, and heat exchangers) ● Application of carbon-neutral energy sources such as hydrogen, e-Fuel, ammonia, and biofuel to energy conversion systems ● Advanced modeling and analysis of thermo-fluid systems using theories, numerical methods, and AI | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Application of high-frequency water injection for the performance improvement of waste-heat-recovery boilers, International Communications in Heat and Mass Transfer, 2023. | | | |
| | Comprehensive investigation on ballistic injection characteristics of GDI injector: A particular focus on injection pressure and fuel effects, Fuel, 2023. | | | |
| | Development of simplified model for injection rate prediction of diesel injectors during transient and steady operation, Fuel, 2022. | | | |
| Others 기타사항 | <p>Our lab has broad collaboration networks with foreign research institutes (Advanced Photon Source (Argonne National Lab), AIST, and so on) so that the graduate students can have opportunities to visit and perform research abroad that will help students raise their global senses as well as research potentials.</p> <p>The students having basic knowledge of thermodynamics, fluid mechanics, heat transfer, and internal combustion engines are welcomed.</p> | | | |




Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Shin | | |
| | Given Name | Hyunseong | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Department of Mechanical Engineering | | Major 소속전공 | Mechanical Engineering |
| Contact Information 연락처 정보 | Email | shs1106@inha.ac.kr | | |
| | Telephone | 82-10-9080-2530 | | |
| | Home Page | http://mmml.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master _1_ / Ph.D. _1_ |
| Research Field 연구분야 설명 | <p>Multiscale Mechanics of Materials Laboratory at INHA University focuses on the <u>mechanics of materials</u> across the wide length and time scales (nano scale to macro scale). Currently, we concentrate on <u>multiscale modeling and simulation</u> of <u>advanced materials</u> (e.g., nano-composites, composite structures, solar cells, thin film, etc.) and <u>advanced process</u> (e.g., advanced lithography, 3D printing, etc.), by combining the classical molecular dynamics simulation, micro-mechanics theory, continuum finite element method, fracture mechanics theory.</p> | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | <p><u>Hyunseong Shin</u>, Joonmyung Choi, Maenghyo Cho, " An efficient multiscale homogenization modeling approach to describe hyperelastic behavior of polymer nanocomposites ", Composites Science and Technology (ISSN: 0266-3538), 175, 128-134, Elsevier, 2019.05.03.</p> | | | |
| | <p><u>Hyunseong Shin</u>, Maenghyo Cho, " Multiscale model to predict fatigue crack propagation behavior of thermoset polymeric nanocomposites ", Composites Part A : Applied Science and Manufacturing (ISSN: 1359-835X), 99, 23-31, Elsevier, 2017.08.01.</p> | | | |
| | <p><u>Hyunseong Shin</u>, Byungjo Kim, Jin-Gyu Han, Man Young Lee, Jong Kyoo Park, Maenghyo Cho, " Fracture Toughness Enhancement of Thermoplastic/Epoxy Blends by the Plastic Yield of Toughening Agents: A Multiscale Analysis ", Composites Science and Technology (ISSN: 0266-3538), 145, 173-180, Elsevier, 2017.06.16.</p> | | | |
| Others 기타사항 | | | | |



Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | LEE | | |
| | Given Name | CHUL-HEE | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Mechanical Engineering | | Major 소속전공 | Smart Construction Machinery Design & Analysis |
| Contact Information 연락처 정보 | Email | ddutete@inha.ac.kr | | |
| | Telephone | +82-32-860-8868 | | |
| | Home Page | http://avdclab.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D. <u>2</u> |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - Advanced Self-Driving Mobility - Advanced Semiconductor Packaging - A.I. and Machine Learning - Digital-Twin based VPD - Intelligent Mechatronics | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Design of triple cogeneration system for hydrogen fuel cell in greenhouse based on resource analysis, 2023 | | | |
| | Performance Analysis of Time Series Deep Learning Models for Climate Prediction in Indoor Hydroponic Greenhouses at Different Time Intervals, 2023 | | | |
| | Machine vision-based recognition of elastic abrasive tool wear and its influence on machining performance, 2023 | | | |
| Others 기타사항 | <p>Our lab conducts in advanced self-driving mobility, innovative research in a variety of fields, including advanced semiconductor packaging, AI and machine learning, digital twin VPD, intelligent mechatronics. In autonomous mobility research, we are researching environmental recognition through sensor fusion, AI-based intelligent route planning, and integrated control for autonomous driving. In advanced semiconductor packaging, we research analysis and optimization, ultra-precision printing/dispensing module and system analysis, process optimization, and in AI and machine learning, AI-based control for smart farms, and intelligent risk detection and prediction. Digital twin VPD studies tribological condition monitoring and multi-body dynamics analysis based on a virtual environment, and Lastly, intelligent mechatronics studies intelligent friction control and design and control using smart materials.</p>  | | | |



Introduction of Laboratory

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|---|---|-------------------------|--------------------------------|--|
| Name 성함 | Surname | LEE | | |
| | Given Name | Hyun-Taek | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Mechanical Engineering | | Major 소속전공 | Advanced Manufacturing |
| Contact Information 연락처 정보 | Email | htlee@inha.ac.kr | | |
| | Telephone | +82 32-860-7376 | | |
| | Home Page | http://imfm.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master <u>1</u> / Ph.D. <u>1</u> |
| Research Field 연구분야 설명 | <p>Innovative Manufacturing</p> <ul style="list-style-type: none"> To develop advanced fabrication technologies to overcome the limitations of conventional manufacturing processes. (Hybrid Manufacturing, 3D printing, Focused Ion Beam process) <p>Functional Materials</p> <ul style="list-style-type: none"> To explore unique properties of functional/smart materials in micro-/nanoscale. (Shape memory alloys, Piezoelectric materials, Biological composite) <p>Creative Design</p> <ul style="list-style-type: none"> To maximize the functionality or capability of materials/applications through creative design. (Origami/Kirigami based design, Compliant structure, Bio-inspired design) <p>Applications</p> <ul style="list-style-type: none"> To combine manufacturing, materials, and design knowledges to utilize at small scale devices for various applications. (Micro-actuators and sensors) | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Micro-tentacle actuators based on shape memory alloy smart soft composite, <i>Advanced Functional Materials</i> (2020) Vol.30, No.34, p.2002510 (Inside back cover) | | | |
| | Laser Controlled 65 Micrometer Long Microrobot Made of Ni-Ti Shape Memory Alloy, <i>Advanced Materials Technologies</i> (2019) Vol.4, No.12, p.1900583. (Front cover) | | | |
| | Shape memory alloy (SMA) based microscale actuators with 60% deformation rate and 1.6 kHz actuation speed, <i>Small</i> (2018) Vol.14, No.23, p.1801023 (Front cover) | | | |
| Others 기타사항 | <p>Research Highlights</p>    | | | |



Introduction of Laboratory

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|---|---|---------------------------|--------------------------------|--|
| Name 성함 | Surname | Park | | |
| | Given Name | Il Woong | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Mechanical Engineering | | Major 소속전공 | Thermal Fluid |
| Contact Information 연락처 정보 | Email | ilwoongpark@inha.ac.kr | | |
| | Telephone | +82-32-860-7335 | | |
| | Home Page | https://mftel.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D <u> 1 </u> |
| Research Field 연구분야 설명 | Thermal management solutions based on multiphase flow - Phase-change heat transfer - Fabrication of microstructures - Thermal energy storage - Two-phase flow instabilities | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Il Woong Park , Maria Fernandino, Carlos Alberto Dorao, "Wetting state transitions over hierarchical conical microstructures," <i>Advanced Materials Interfaces</i> , 5.5, 1701039, 2018. Link *Inside Front Cover | | | |
| | Il Woong Park* , In Yeop Kang, Hyeon Jin Yong, "Flow boiling instability induced by the coexistence of ejecting and sliding bubbles in subcooled flow boiling," <i>International Journal of Heat and Mass Transfer</i> , 179, 121711, 2021 | | | |
| | Il Woong Park , In Yeop Kang, Jia Yu, Yeon-Gun Lee, "Bubble lift-off diameter of lifting-off and ejecting bubbles in subcooled flow boiling," <i>International Communications in Heat and Mass Transfer</i> , 129, 105727, 2021 | | | |
| Others 기타사항 | | | | |

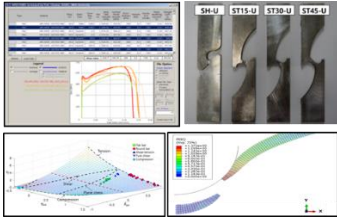
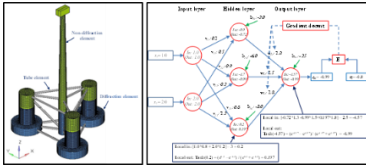
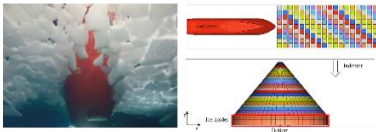


Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Yoon | | |
| | Given Name | Sang-Hee | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Mechanical Engineering | | Major 소속전공 | Mechanical Engineering |
| Contact Information 연락처 정보 | Email | shyoon@inha.ac.kr | | |
| | Telephone | +82-32-860-7314 | | |
| | Home Page | https://sites.google.com/site/yonresearchgroup | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D <u> 1 </u> |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - Muscle-inspired nanocomposites with controllable mechanoelectrical properties - Piezoresistive high-g accelerometers - Mechanical low-pass filters for high-g accelerometers - Inertial igniters for small thermal batteries | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Park S, Song S, Yoon S-H. Ultrasonication-induced and diluent-assisted suspension polymerization for size-controllable synthesis of polydimethylsiloxane droplets. Colloids and Surfaces A: Physicochemical and Engineering Aspects. 2022;644:128827 | | | |
| | Bae M, Woo S, Lee JM, Lee W, Yoon S-H. A prediction model for photopatternable thickness of photocurable polymer nanocomposites containing carbon-based high-aspect-ratio fillers. Composites Science and Technology. 2022;218:109207. | | | |
| | Ha S, Choi Y, Lee W, Kim Y, Yoon S-H. Prediction of mechanical properties of graphite nanoflake/polydimethylsiloxane nanocomposites as affected by processing method. Composites Part B: Engineering. 2021;224:109186. | | | |
| Others 기타사항 | <p>Our research interests lie in <u>bioinspiration</u> for studying novel engineering innovations inspired by the solutions existed in biological evolution, with the ultimate aim to develop disruptive technology solutions for complex human problems. Our mission is equivalently placed on: microelectromechanical systems (<u>MEMS</u>)/<u>nanoengineering</u> in hopes of developing micro/nanoscale tools for new-concept devices (including sensors and actuators) which far surpass conventional engineering solutions; and <u>vibration</u> for lighting the way for the use and protection of mechanical systems at high-g environment. Our research is performed through combined efforts in theoretical mechanics, materials engineering, micro/nanoscale fabrication.</p> | | | |



Introduction of Laboratory

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|---------------------------------|---|---|--|--|
| Name | Surname | Choung | | |
| | Given Name | Joonmo | | |
| Position | Full professor | Gender | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department | naval arch. and ocean eng. | Major | Ship and offshore structures | |
| Contact Information | Email | jmchoung@inha.ac.kr | | |
| | Telephone | +82 10 8604 7346 | | |
| | Home Page | http://sose.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower | Master (2 vacancies) Ph.D. (2 vacancies) | |
| Research Field | ▪ Research for materials and ductile fracture  <ul style="list-style-type: none"> - To develop new fracture models against ship collisions, and underwater explosions. - To conduct material calibration tests and structural failure tests using 50tonf UTM and 5tonf HTM (high speed test machine). | | | |
| | ▪ Research for floating offshore wind turbines (FOWT)  <ul style="list-style-type: none"> - New OPB fatigue prediction technique. - Fully coupled aero-hydro-structure-mooring dynamics technique. - ANN (artificial neural network) model for FOWT. | | | |
| | ▪ Research for ice-to-arctic vessel interactions  <ul style="list-style-type: none"> - Ship-to-ice resistance simulations using FEA - Ice crushing mechanics based on continuum theory | | | |
| Career Achievements | Student can study the problems that they introduced or identified. Students can concentrate on special projects. Students can be author of popular publications. | | | |
| Others | ▪ Laboratory facilities - 50tonf UTM for monotonic strength tests and cyclic fatigue tests suited with temperature chamber from -200 to +300 - 5tonf HTM for high speed strain rate tests suited with temperature chamber | | | |
| | ▪ Monthly payment - more than one million KRW for a master student and two million KRW for a Ph.D. student ▪ Annual incentive - abt 1 million KRW for a master student and abt 2 million KRW for a Ph.D. student | | | |




Introduction of Laboratory

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|---|---|--|--------------------------------|---|
| Name 성함 | Surname | Oh | | |
| | Given Name | Dongyeop | | |
| Position 직급 | Assistant Professor | | Gender 성별 | ▪ Male <input type="checkbox"/> Female |
| Department 소속학과 | Polymer Engineering | | Major 소속전공 | Polymer Engineering |
| Contact Information 연락처 정보 | Email | d.oh@inha.ac.kr | | |
| | Telephone | +82-32-860-7486 | | |
| | Home Page | https://sites.google.com/view/dongyeop-oh https://scholar.google.co.kr/citations?user=2qpLZXAAAA&hl=ko | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ▪ Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master __1__ / Ph.D __1__ |
| Research Field 연구분야 설명 | - Smart/Self-Responsive Polymers using Natural Polymers - Plastic Upcycling/Recycling Technologies - Sustainable High-Performance Vegan Leathers - Cellulose/Chitin Nanofiber Materials for Environmental Applications | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | "A self-healing nanofiber-based self-responsive time-temperature indicator for securing a cold-supply chain." <i>Advanced Materials</i> 32.11 (2020): 1907064. | | | |
| | "Sustainable and recyclable super engineering thermoplastic from biorenewable monomer." <i>Nature communications</i> 10.1 (2019): 2601. | | | |
| | Ultrastiff hydrogels <i>Nature Materials</i> 2024.01.05 <i>in press</i> | | | |
| Others 기타사항 | ✓ All the laboratory members or graduate students are working on government or industrial research projects, and thus are being financially supported by the project. | | | |



Introduction of Laboratory

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|--|--|-----------------------------|--|--|
| Name 성함 | Surname | Kwak | | |
| | Given Name | Hyo-Bum | | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Program in Biomedical Science & Engineering | Major 소속전공 | Exercise Physiology | |
| Contact Information 연락처 정보 | Email | kwakhb@inha.ac.kr | | |
| | Telephone | +82-032-860-8183 | | |
| | Home Page | http://iem.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | (How Many) Master <u>1</u> / Ph.D. <u>1</u> | |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> Regulation of mitochondrial function and insulin resistance in skeletal muscle: role of aging, obesity, and exercise Effects of aging and exercise on mitochondrial function, ROS, and apoptosis in skeletal muscle ("sarcopenia"), heart, and brain Lipid metabolism and mitochondrial function in skeletal muscle | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Moderate aerobic exercise training ameliorates impairment of mitochondrial function and dynamics in skeletal muscle of high-fat diet-induced obese mice, FASEB J, 35(2): e21340, 2021 | | | |
| | Re-setting the circadian clock using exercise against sarcopenia, Int J Mol Sci, 21(9): 3106, 2020 | | | |
| | Effects of aging and exercise training on mitochondrial function and apoptosis in the rat heart, Pflugers Arch, 472(2): 179-193, 2020 | | | |
| Others 기타사항 | <p>■ Ongoing Research Projects (Funding)</p> <ul style="list-style-type: none"> Development of healthy aging technology against sarcopenia based on integrative exercise medicine (2019 - 2025) Beneficial effects and mechanisms of exercise training on sarcopenic obesity-induced metabolic diseases (2018 - 2023) BK21 Program in Biomedical Science and Engineering (2020 – 2027) <p>■ My Current Lab Members</p>  | | | |



Introduction of Laboratory

| | | | | |
|---|---|------------------|--------------------------------|--|
| Name 성함 | Surname | Kim | | |
| | Given Name | Dong Wook | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Chemistry | | Major 소속전공 | Organic Chemistry |
| Contact Information 연락처 정보 | Email | kimdw@inha.ac.kr | | |
| | Telephone | 032-860-7679 | | |
| | Home Page | | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D. <u>2</u> |
| Research Field 연구분야 설명 | Research Field: Organic Chemistry, Medicinal Chemistry, Molecular Imaging. Our laboratory explores novel biologically active molecules that can be developed as a molecular probe to elucidate several biological functions related to currently issued diseases. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Production of Metal-Free C, N Alternating Nanoplatelets and Their In Vivo Fluorescence Imaging Performance without Labeling. <i>Adv. Funct. Mater.</i> 2020 , 30, 2004800 (IF: 16.836) | | | |
| | Macrophage cell tracking PET imaging using mesoporous silica nanoparticles via in vivo bioorthogonal F-18 labeling. <i>Biomaterials</i> 2019 , 199, 32–39 (IF: 10.317) | | | |
| | Hydrogen-bond promoted nucleophilic fluorination: concept, mechanism and applications in positron emission tomography. <i>Chem. Soc. Rev.</i> 2016 , 45, 4638 (IF: 40.443) | | | |
| Others 기타사항 | <p>Based on knowledge of organic chemistry, our group has developed labeling method of radioisotope and modified model compound to an adequate labeled compound with a reasonable pharmacophore model. Interdisciplinary our research program integrates concepts from medicinal chemistry, labeling chemistry, and organic synthesis/methodology, which target new radiopharmaceuticals with the help of noninvasive imaging techniques for in vitro and in vivo characterization.</p> <p>The diagram illustrates a research workflow: <ul style="list-style-type: none"> Phase transfer catalyst for RI labeling and SN2 reactions (top left) Precursor (top middle) Final Goal: Development of molecular imaging probes using radio-labeling technology based on organic chemistry (top right) Design of peptide/NP/low molecular imaging probes (middle left) Feed back system (center, orange circle) Evaluation of In vivo imaging and feed back (middle right) Obtaining the optimized molecular imaging probes (bottom left) Development of phase transfer catalysts for SN2 reactions and F-18 radiolabeling method (bottom right) Design and Synthesis of low molecular based radiopharmaceuticals for molecular imaging study (bottom right) Development of peptide or nano-material based molecular imaging probes using Click Chemistry (bottom right) Evaluation of these probes using molecular imaging (PET, SPECT, MR, Optical) (bottom right) </p> | | | |



Introduction of Laboratory

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|---|--|-------------------|--------------------------------|----------------------------|
| Name 성함 | Surname | Park | | |
| | Given Name | Soo-Jin | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Department of Chemistry | | Major 소속전공 | Surface chemistry |
| Contact Information 연락처 정보 | Email | sjpark@inha.ac.kr | | |
| | Telephone | +82-32-876-7234 | | |
| | Home Page | sjpark.inha.ac.kr | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master ____ / Ph.D ____1__ |
| Research Field 연구분야 설명 | Carbonaceous materials Polymer composites Interface science Energy storage materials | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Supercapacitors: Large-Scale Conductive Yarns Based on Twistable Korean Traditional Paper (Hanji) for Supercapacitor Applications: Toward High-Performance Paper Supercapacitors / <i>Advanced Energy Materials</i> 8 , 1801854 | | | |
| | Facile construction of MoO ₃ @ZIF-8 core-shell nanorods for efficient photoreduction of aqueous Cr (VI) / <i>Applied Catalyst B: Environmental</i> 240 , 92-101 | | | |
| | A rational design of cellulose-based heteroatom-doped porous carbons: Promising contenders for CO ₂ adsorption and separation / <i>Chemical Engineering Journal</i> 420 , 130421 | | | |
| Others 기타사항 | <p>All graduates accepted for our Lab will be financially supported by the government grants and other research grants.</p> <p>The main projects of our laboratory are as below.</p> <ul style="list-style-type: none"> - Development of Intermetallic catalyst (IMC) model and decomposition of diesel vehicle exhaust emissions - Development of photocatalysts-based frame for VOCs adsorption and removal - Development of GDL (Gas diffusion layer) system and its model predictive control system - Development of lithium pretreatment technology to improve the irreversible 90% and high-capacity anode materials for electric vehicles | | | |








Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Kang | | |
| | Given Name | Dong Won | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Chemistry | | Major 소속전공 | Inorganic Chemistry |
| Contact Information 연락처 정보 | Email | dwkang@inha.ac.kr | | |
| | Telephone | +82-32-860-7675 | | |
| | Home Page | https://sites.google.com/view/imekang/home?pli=1 | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D __1__ |
| Research Field 연구분야 설명 | Research Field: Inorganic Chemistry, Material Chemistry, Molecular Engineering - Design, synthesis, characterization, and postsynthetic functionalization of two or three-dimensional covalent-organic frameworks (COFs), metal-organic frameworks (MOFs), porous organic polymers (POPs), and hydrogen-bonded organic frameworks (HOFs). Furthermore, we have focused composite materials containing emerging porous materials for practical applications like gas capture, photocatalysis, and advanced therapeutics | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Wavelength engineerable porous organic polymer photosensitizers with protonation triggered ROS generation", <i>Nat. Commun.</i> 2023 , 14, 1498. | | | |
| | Enhanced Energy Transfer in A π -Conjugated Covalent Organic Framework Facilitates Excited-State Nickel Catalysis", <i>Angew. Chem. Int. Ed.</i> 2023 , 135(11), e202218908. | | | |
| | Covalent Organic Framework with Staggered Stacking of Phthalocyanines for Mitochondria-Targeted Photodynamic Therapy", <i>J. Am. Chem. Soc.</i> 2024 , <i>in press</i> . | | | |
| Others 기타사항 | <p>We're recruiting foreign graduate students. We pursue a democratic and social lab environment rather than a hierarchical one.</p> <p>ALL applicants MUST have fluent English language skills (If you can speak Korean, it is better but not important)."</p> <p>Monthly Stipend is dependent on current funding situation.</p> | | | |



Introduction of Laboratory

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|---|---|---|--|
| Name 성함 | Surname | Min | |
| | Given Name | Kyung-Jin | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Biological Sciences | Major 소속전공 | Biology of Aging |
| Contact Information 연락처 정보 | Email | minkj@inha.ac.kr | |
| | Telephone | +82-32-860-8193 | |
| | Home Page | http://biogerontology.inha.ac.kr/ | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master ____ / Ph.D. ____ |
| Research Field 연구분야 설명 | <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> ▶ Study of Dietary Restriction and Longevity ▶ Searching for Anti-aging Drugs and Its Mechanisms ▶ Microbiota and Aging ▶ Physiological Response to Low Dose Radiation </div> | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Mechanisms of Lifespan Regulation by Calorie Restriction and Intermittent Fasting in Model Organisms, <i>Nutrient</i> (2020), 12(4): 1194-1217 | | |
| | Asparaginyl-tRNA Synthetase, a Novel Component of Hippo Signaling, Binds to Salvador and Enhances Yorkie-Mediated Tumorigenesis, <i>Frontiers in Cell and Developmental Biology</i> (2020), 8(32): 1-13 | | |
| | Transplantation of ACE2- Mesenchymal Stem Cells Improves the Outcome of Patients with COVID-19 Pneumonia, <i>Aging and Disease</i> (2020), 11(2): 216-228 | | |
| Others 기타사항 | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">      </div> <div style="flex: 2; padding-left: 10px;"> <p>Lab. of Biogerontology in Inha University</p> <p>Our lab has currently one post-doc and one PhD student, and has been supported by National Research Foundation of Korea. We can provide the fi supports for your study.</p> </div> </div> | | |



Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Cho | | |
| | Given Name | Jang-Cheon | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Biological Sciences | | Major 소속전공 | Microbiology Molecular Microbial Ecology |
| Contact Information 연락처 정보 | Email | chojc@inha.ac.kr | | |
| | Telephone | +82-32-860-7711 | | |
| | Home Page | http://www.cholabinha.org | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master <u>2</u> / Ph.D. <u>2</u> |
| Research Field 연구분야 설명 | 1. Cultivation of Unculture Microbes from diverse environments - Ocean, Lake, Groundwater - Novel physiology of novel microorganisms 2. Microbial genomics, Metagenomics, and Microbiome analyses 3. Phage isolation and genomics 4. Viral metagenomics and Phage-borne antibiotic resistance genes | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | 2020. Freshwater viral metagenome reveals novel and functional phage-borne antibiotic resistance genes. <i>Microbiome</i> 8:75. | | | |
| | 2019. Culturing the ubiquitous freshwater actinobacterial acl lineage by supplying a biochemical 'helper' catalase. <i>ISME J.</i> 13(9):2252-2263 | | | |
| | 2019. Spindle-shaped viruses infect marine ammonia-oxidizing thaumarchaea. <i>Proc. Natl. Acad. Sci (USA)</i> . 116(31):15645-15650. | | | |
| Others 기타사항 | My lab has currently 1 research professor, 3 post-docs, 2 PhD students and 3 master students. They are all supported by national research grants. Recently the department has won a grant called BK21-Four, designed for supporting graduate students' scholarship and stipend funded by Korea NRF. My lab maintains "High-Throughput Bacterial Culture Collection" called IMCC, containing over 10,000 bacterial strains, so graduate students may start their research without delay. | | | |




Introduction of Laboratory

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|---|---|-------------------------|--------------------------------|--------------------------|
| Name 성함 | Surname | Son | | |
| | Given Name | Sejin | | |
| Position 직급 | Associate Professor | | Gender 성별 | Female |
| Department 소속학과 | Biological Science | | Major 소속전공 | Biomedical Science |
| Contact Information 연락처 정보 | Email | ssejin@inha.ac.kr | | |
| | Telephone | 032-860-7693 | | |
| | Home Page | https://www.son-lab.com | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | | Required Manpower 필요인력 수 | Master ____ / Ph.D __2__ |
| Research Field 연구분야 설명 | <p>Son Laboratory is interested in elucidating how biomaterials interact with biological environment and coordinate biological/immunological functions, in order to better deal with the complexity of disease progression. As disease is getting complicated, our team seeks to design, construct, and evaluate an unique, sophisticated bio- and nano-systems capable of interacting with disease microenvironment to promote the precise action of biopharmaceuticals including genes, vaccine components, and antibodies. With solid ground on PI's diverse research and educational backgrounds covering biomaterials, bioengineering, micro- and nanotechnologies, immune-oncology and gene therapy, our team aims to develop new and multidisciplinary biomaterials-based tools and principles to modulate immune responses and promote the precise action of biopharmaceuticals for cancer, infectious disease, and autoimmune disease. The proposed studies will not only contribute to understanding of the largely unexplored interdisciplinary research areas of material science, immunology and cancer biology, but also promote clinical translation of new immunotherapies.</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Cancer nanomedicine for combination cancer immunotherapy , 2019, Nature Reviews Materials 4(6), 398-414 | | | |
| | Modularly Programmable Nanoparticle Vaccine Based on Polyethyleneimine for Personalized Cancer Immunotherapy , 2021, Advanced Science 8 (5), 2002577 | | | |
| | Sugar-nanocapsules imprinted with microbial molecular patterns for mRNA vaccination , 2020, Nano letters 20 (3), 1499-1509 | | | |
| Others 기타사항 | <ul style="list-style-type: none"> ● PI, Sejin Son, has built diverse research backgrounds in biomedical research covering biomaterials, gene therapy, vaccine, and cancer immunotherapy in preclinical setting to make technology translation, resulting in publications in many high profile journals including Nature Biomedical Engineering (In revision), Nature Review Materials, Nature Communications, Advanced Science, ACS nano, Advanced Functional Materials, Nano Letters, and many others. ● PI has been working with many students from diverse backgrounds in gender, ethnicity (Vietnam, Myanmar, Canada, India, Pakistan, Canada, US...) culture, and research fields at Harvard Medical School and University of Michigan for 8 years. ● She has mentored more than 12 students providing them with guidance in career development as well as technical skills in bench work. ● You are strongly encouraged to apply the lab if you are self-driven and highly motivated student to improve your technical skills in this cutting-edge and hot research topic and to culture leadership to be a promising independent scientist in coming years. ● Benefit: Eligible students expect to receive full support of living cost, and attending international conferences. | | | |



Introduction of Laboratory

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|---|--|--|----------------------------|
| Name 성함 | Surname | Lee | |
| | Given Name | Wookey | |
| Position 직급 | Full Professor | Gender 성별 | Male |
| Department 소속학과 | Industrial Engineering, Biomedical Science Engineering(BMSE), Industrial Security Governance | Major 소속전공 | Database, Deep Learning |
| Contact Information 연락처 정보 | Email | trinity@inha.ac.kr | |
| | Telephone | +82)032-860-7371 | |
| | Home Page | - | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | Yes | Required Manpower 필요인력 수 | Master ____ / Ph.D _3_ |
| Research Field 연구분야 설명 |  <ul style="list-style-type: none"> - Director: VOICE AI Institute, Inha University - IEEE TCDE executive committee member - Chairs: APweb, BigComp, CIKM, Dasfaa, EDB, ITA/EA, KJDB, etc - Big data-based patent portfolio system - Development of artificial intelligence talking system for speech impaired patients - A study on the problem the structural complexity of Big data networks - Development of AI Convergence Technology for Productivity Innovation in Smart City Industry - Conceptual Design Development of Knowledge Base Framework for Knowledge-Based Plant O&M | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Jafar Afshar, Arousha Haghighian Roudsari, Wookey Lee: Top-k team synergy problem: Capturing team synergy based on C3. Inf. Sci. 589: 117-141 (2022) | | |
| | Arousha Haghighian Roudsari, Jafar Afshar, Wookey Lee, Suan Lee: PatentNet: multi-label classification of patent documents using deep learning based language understanding. Scientometrics 127(1): 207-231 (2022) | | |
| | Wookey Lee, Jessica Jiwon Seong, Busra Ozlu, Bong Sup Shim, Azizbek Marakhimov, Suan Lee: Biosignal Sensors and Deep Learning-Based Speech Recognition: A Review. Sensors 21(4): 1399 (2021) | | |
| Others 기타사항 | We are recruiting passionate students. Who has high interest on Deep Learning | | |



Introduction of Laboratory

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|---|--|---|---|--|
| Name | Surname | Lee | | |
| | Given Name | Guan-hong | | |
| Position | Professor | Gender | ✓ Male □ Female | |
| Department | Ocean Sciences | Major | Oceanography | |
| Contact Information | Email | ghlee@inha.ac.kr | | |
| | Telephone | +82-32-860-7707 | | |
| | Home Page | https://p-ghlee.inha.ac.kr | | |
| Monthly Stipend Provided or Not | ✓ Yes □ No | Required Manpower | (How Many) Master ____ / Ph.D.. <u>1</u> | |
| Research Field 연구분야 설명 | <p>RESEARCH AREA:</p> <ul style="list-style-type: none"> • Hydrodynamics • Sediment Dynamics • Coastal and Estuarine Morphodynamics <p>The Coastal and Estuarine Morphodynamics Laboratory (CEML) explores the complex hydrodynamics and sediment transport of both the coastal and estuarine environments. Nowadays, humans have modified these environments through large coastal projects, which eventually changed the dominant processes.</p> <p>To aid our understanding, we utilize survey instruments such as RTK-GPS, altimeters, and UAVs to collect survey data. These data are visualized using GIS software (e.g., ArcGIS) and are analyzed to understand morphological changes. We then deploy field instruments such as ADV, ADCP, OBS, and ABS to measure flow velocity and suspended sediment concentration to understand sediment dynamics of morphologic changes. Recently, we employed numerical models to gain a holistic understanding of the spatiotemporal variation of sediment transport and morphodynamics, and to predict the morphologic change due to sea-level rise and anthropogenic alterations.</p> | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | <p>Jung, N. W., et al. (2021). MorphEst: An Automated Toolbox for Measuring Estuarine Planform Geometry from Remotely Sensed Imagery and Its Application to the South Korean Coast. <i>Remote Sensing</i>, 13(2), 330.</p> | | | |
| | <p>Chang, J., et al. (2020). Sediment transport mechanisms in altered depositional environments of the Anthropocene Nakdong Estuary: A numerical modeling study. <i>Marine Geology</i>, 106364.</p> | | | |
| | <p>Figueroa, S. M., et al. (2020). Evaluation of along-channel sediment flux gradients in an anthropocene estuary with an estuarine dam. <i>Marine Geology</i>, 429, 106318.</p> | | | |
| Others 기타사항 | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>GIS (Geomorphology)</p> </div> <div style="text-align: center;"> <p>IN-SITU FIELD DATA (Hydrodynamics)</p> </div> <div style="text-align: center;"> <p>NUMERICAL MODELING (Sediment Transport)</p> </div> </div> | | | |



Introduction of Laboratory

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|---|---|---|--|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Jae Woo | | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Physics | Major 소속전공 | Statistical Physics | |
| Contact Information 연락처 정보 | Email | jaewlee@inha.ac.kr | | |
| | Telephone | 82-32-860-7660 | | |
| | Home Page | https://sites.google.com/view/compsysbdai/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D <u> 1 </u> | |
| Research Field 연구분야 설명 | <p>Complex Systems AI Big Data Lab</p> <p>We are interesting to topics complex systems, machine learning, artificial intelligence, big data based on statistical physics and critical phenomena</p> <p>Research Area</p> <ul style="list-style-type: none"> ● Complex Systems and Complex Networks ● Nonequilibrium statistical physics ● Econophysics ● Social Physics ● Ecological Systems and Ecological Networks ● Brain Dynamics and Self-Organized Criticality ● Futures Studies | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | B. J. Mafwele and J. W. Lee, "Relationships between transmission of malaria in Africa and climate factors", Sci. Rep. 12, 14392 (2022). | | | |
| | N. Jung et al. "Avalanche size distribution of an integrate-and-fire neural model on complex networks", Chaos 30, 063118 (2020). | | | |
| | J. W. Lee and A. Nobi, "State and network structures of stock markets around the global financial crisis", Computational Economics 51, 195-210 (2018) (SSCI). | | | |
| Others 기타사항 | <p>Current international students:</p> <p>1. Quang Anh Le, Vietnam</p> <p>Former students</p> <p>1. Ashadun Nobi, Bangladeshi (Now, Professor in Bangladeshi)</p> <p>2. Biseco Juma Mafwele, Tanzania (Now, Researcher in Tanzania)</p> <p>I recommend that you apply to GKS (Global Korea Scholarship: http:// www.studyinkorea.go.kr)</p> | | | |



Introduction of Laboratory

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|---|--|--------------------------|--------------------------------|------------------------------|
| Name 성함 | Surname | Jung | | |
| | Given Name | JongHoon | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Physics | | Major 소속전공 | Condensed Matter Experiments |
| Contact Information 연락처 정보 | Email | jhjung@inha.ac.kr | | |
| | Telephone | +82-32-860-7659 | | |
| | Home Page | https://qfml.cafe24.com/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master __1__ / Ph.D __1__ |
| Research Field 연구분야 설명 | <p>We are aiming at (i) the synthesis of transition-metal oxide (sulfide, nitride) with single crystal, thin film, and nano-particle(rod) forms, (ii) the understanding of their physical (structural, electrical, magnetic, and optical) properties through the close correlation between charge, spin, orbital, and lattice degrees of freedom, and (iii) the realization of new functional devices related to information technology and energy-harvesting technology.</p> <p>Current Topics</p> <ul style="list-style-type: none"> - Basic Science and Technological Application of Contact Electrification - Emerging Phenomena in Flexible Transition Metal Oxides | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | D. W. Lee et al., Correlation between Frictional Heat and Triboelectric Charge: In operando Temperature Measurement during Metal-Polymer Physical Contact, Nano Energy. 103, 107813 (2022) | | | |
| | D. G. Jeong et al., On the Origin of Enhanced Power Output in Ferroelectric Polymer-based Triboelectric Nanogenerators: Role of Dipole Charge versus Piezoelectric Charge, Nano Energy. 103, 107806 (2022) | | | |
| | H. S. Kim et al., Ferroelectrically augmented contact electrification enables efficient acoustic energy transfer through liquid and solid media, Energy Environ. Sci. 15, 1243 (2022) | | | |
| Others 기타사항 | <p>Current international Post-Doc.</p> <p>1. Dheeraj Kumar (India)</p> <p>Former international Post-Doc. and student</p> <p>1. Naresh Kumar (India) [Current: Professor, Motilal Nehru National Institute of Technology]</p> <p>2. Taufik Bonaedy (Indonesia) [Current: Researcher in Indonesia]</p> <p>3. Preetam Singh (India) [Current: Research Associate, Centre of Nanotechnology, Indian Institute of Technology Roorkee]</p> <p>4. Huidrom Hemojit Singh (India) [Current: DST INSPIRE Faculty, National Institute of Technology Manipur]</p> | | | |



Introduction of Laboratory

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|---|---|---|--------------------------------|--|
| Name 성함 | Surname | Lee | | |
| | Given Name | Geunseop | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Physics | | Major 소속전공 | Condensed matter Physics |
| Contact Information 연락처 정보 | Email | glee@inha.ac.kr | | |
| | Telephone | 82-32-860-7668 | | |
| | Home Page | http://surface-nano.inha.ac.kr/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | Master ____ / Ph.D ____1__ |
| Research Field 연구분야 설명 | <ul style="list-style-type: none"> - Growing ultrathin films and fabricating nanostructures on surfaces and characterizing their physical properties in atomic and nanometer scale - Phase transitions in reduced dimensionality, and explore the influences of defects/impurities in the phase transition - Investigating charge density waves and topological properties in low-dimensional system, particularly in two-dimensional materials. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | "Unveiling the origin of <i>n</i> -type doping of natural MoS ₂ : carbon", npj 2D Mater Appl. 7 , 60 (2023). | | | |
| | True First-Order Surface Phase Transition without nanoscale Phase Separation", ACS Nano 17 , 11764 (2023) | | | |
| | "Intertwined Solitons and Impurities in a Quasi-One-Dimensional Charge-Density-Wave System: In/Si(111)", Geunseop Lee , Hyungjoon Shim, Jung-Min Hyun, Hanchul Kim, Phys. Rev. Lett. 122 , 016102 (2019). | | | |
| Others 기타사항 | <p>Our group (surface-Nano Laboratory) has wide interests in many fields in fabricating nanostructures at surfaces and characterizing their physical properties in atomic and nanometer scale. Utilizing scanning tunneling microscopes (STM) in the Lab and photoelectron spectroscopy (PES) in synchrotron facility, we investigate atomic and electronic structures of ultrathin films grown on metals and semiconductor surfaces and two-dimensional materials. We study various condensed-matter physics at surfaces and 2D materials, including phase transitions in reduced dimensionality, charge density waves and topological properties, and explore the influences of defects/impurities in such phase transitions.</p> | | | |



Introduction of Laboratory

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|--|--|--|--|--|
| Name 성함 | Surname | Kang | | |
| | Given Name | Ju-Hee | | |
| Position 직급 | Full Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Pharmacology, College of Medicine | Major 소속전공 | Pharmacology | |
| Contact Information 연락처 정보 | Email | jothykang@inha.ac.kr | | |
| | Telephone | +82-32-860-9872 | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | (How Many) Master ____ / Ph.D. <u>1</u> | |
| Research Field 연구분야 설명 | <p>1. Neurodegenerative disease (1) Development of biomarkers for early diagnosis of Alzheimer's disease (AD) under collaboration with clinicians (2) Investigation for the pathogenic roles of exosome-like vesicles (ELV) in AD pathogenesis.</p> <p>2. Aging-induced Sarcopenia and metabolic diseases (1) Novel molecular mechanisms underlying aging-induced sarcopenia, a skeletal muscle dysfunction associated with frailty in elderly population: major target is extracellular molecules, myokines, and adipokines. (2) Preventive or therapeutic effects of various molecules against the aging-induced sarcopenia; Pharmacological mechanisms of action (3) Integrative research under collaboration with colleagues who are experts in exercise science.</p> <p>Based on the efforts of above, we hope to discover the novel molecular mechanisms or networks between peripheral tissues and central nervous system.</p> | | | |
| Career Achievements 업적 리스트 (Recent 3 ones) | Moon S., et al. Enrichment of Exosome-Like Extracellular Vesicles from Plasma Suitable for Clinical Vesicular miRNA Biomarker Research. (2019) Journal of Clinical Medicine, 8(11) E1995 | | | |
| | Kim S, et al., Roles of Exosome-Like Vesicles Released from Inflammatory C2C12 Myotubes: Regulation of Myocyte Differentiation and Myokine Expression. (2018) Cellular Physiology and Biochemistry, 48:1829-1842. | | | |
| | Kang JH, et al., CSF biomarkers associated with disease heterogeneity in early Parkinson's disease: the Parkinson's Progression Markers Initiative study. (2016) Acta Neuropathologica, 131:935-949 | | | |
| Others 기타사항 | <p>Currently, 1 senior researcher, 1 research associate and 2 graduate students work in my lab. They work several projects which are supported by national research grants. Monthly stipend will be provided, however, it should be noted that the amount of stipend will be dependent on the grants available. The high level of English (score of IBT≥80, IELTS≥6.0) or Korean (TOPIK≥3) is required to join my lab.</p> <p>NOTE: The information above should be used for appropriate purpose, therefore please don't release other institutions or universities without permission.</p> | | | |

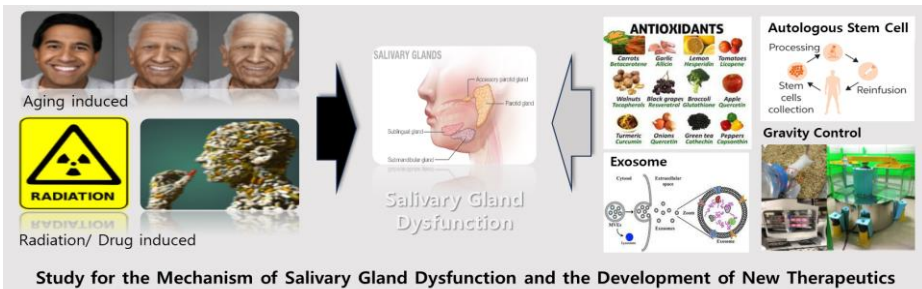


Introduction of Laboratory

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|---|--|--|--------------------------------|--|
| Name 성함 | Surname | Yi | | |
| | Given Name | Jin Wook | | |
| Position 직급 | Assistant Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Medicine, Surgery | | Major 소속전공 | Endocrine surgery |
| Contact Information 연락처 정보 | Email | jinwook.yi@inha.ac.kr | | |
| | Telephone | +82-32-890-3437 | | |
| | Home Page | | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | Required Manpower 필요인력 수 | Master <u>1</u> / Ph.D <u>1</u> |
| Research Field 연구분야 설명 | Target organ: thyroid cancer, parathyroid and adrenal tumor Research field: Cancer bioinformatics - Available frozen stored cancer tissue and cancer cell lines - Biomedical data analysis from microarray and NGS (RNA sequencing) - Basic biologic experiments: cell culture, RT-PCR, Western blot, etc. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Choi YS, Choi SW, Yi JW. Prospective Analysis of TERT Promoter Mutations in Papillary Thyroid Carcinoma at a Single Institution. J Clin Med. 2021 May 18;10(10):2179. | | | |
| | Kwon JH, Yi JW. Correlation between telomerase reverse transcriptase messenger RNA expression and survival of patients with papillary thyroid carcinoma. Surgery. 2021 Jan;169(1):43-49. | | | |
| | Kim M, Kim SJ, Xu Z, Ha SY, Byeon JH, Kang EJ, Shin SH, Yoo SK, Jee HG, Yoon SG, Yi JW, Bae JM, Yu HW, Chai YJ, Cho SW, Choi JY, Lee KE, Han W. BRAFV600E Transduction of an SV40-Immortalized Normal Human Thyroid Cell Line Induces Dedifferentiated Thyroid Carcinogenesis in a Mouse Xenograft Model. Thyroid. 2020 Apr;30(4):487-500. | | | |
| Others 기타사항 | <p>Endocrine surgery is a field of general surgery that gives surgical treatment for various endocrine disorders, such as thyroid, parathyroid and adrenal gland. In the modern society, endocrine surgery is becoming more important because the increased incidence of endocrine related cancers and hormone associated structural disease.</p> <p>My laboratory is equipped with an environment where basic research can be performed using surgically removed endocrine cancer tissue and cancer cell lines. In particular, I have abundant experience in research related to microarray and next-generation sequencing, so I can teach students about clinical application using the biomedical big data analysis.</p> <p>Currently, research is being carried out as a national project to confirm cell appearance, genomic and epigenetic changes by culturing various cancer cells in a zero-gravity environment.</p> <p>I would like to have the opportunity to do research with a sincere student who will study together.</p> | | | |




Introduction of Laboratory

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|---|---|--|--|--|
| Name 성함 | Surname | Choi | | |
| | Given Name | Jeong-Seok | | |
| Position 직급 | Professor | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female | |
| Department 소속학과 | Medicine | Major 소속전공 | Otorhinolaryngology- Head and Neck Surgery | |
| Contact Information 연락처 정보 | Email | jschoi@inha.ac.kr | | |
| | Telephone | +82-32-890-2438 | | |
| | Home Page | | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Required Manpower 필요인력 수 | Master <u> 1 </u> / Ph.D <u> 1 </u> | |
| Research Field 연구분야 설명 |  <p>Study for the Mechanism of Salivary Gland Dysfunction and the Development of New Therapeutics</p> <p>Our main research interest is in the development of new treatments by identifying the mechanisms of salivary gland dysfunctions including:</p> <ul style="list-style-type: none"> ● Anti-cancer therapy induced salivary gland damage ● Salivary gland aging and anti-aging drug ● Autologous stem cell transplantation and stem cell derived exosome therapy ● Salivary epithelial cell culture (2D, 3D, organoid) ● Modulation of salivary gland function using Gravity controlling system ● Crosstalk signaling pathway between salivary epithelial cells and neural cells | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Adiponectin is associated with inflammaging and age-related salivary gland lipid accumulation. Aging (Albany NY) 2023 Mar 27;15(6):1840-1858. | | | |
| | Platelet-rich plasma loaded nerve guidance conduit as implantable biocompatible materials for recurrent laryngeal nerve regeneration NPJ Regen Med 2022 Sep 14;7(1):49 | | | |
| | Cell-derived vesicles from adipose-derived mesenchymal stem cells ameliorate irradiation-induced salivary gland cell damage Regen Ther. 2022 Oct 18;21:453-459. | | | |
| Others 기타사항 | - All graduates accepted for our lab will be financially supported by the government grants and other research grants. | | | |



Introduction of Laboratory

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|---|--|---|--------------------------------|--|
| Name 성함 | Surname | Jung | | |
| | Given Name | Young-Jin | | |
| Position 직급 | Professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Graduate School of Law | | Major 소속전공 | Corporation Law, Bankruptcy Law, Data Law, AI Law etc |
| Contact Information 연락처 정보 | Email / WeChat | junglaw@inha.ac.kr / neovarsa | | |
| | Telephone | +82(0)10-6394-5050 | | |
| | Home Page | https://ilseng.inha.ac.kr/user/ilseng/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | Required Manpower 필요인력 수 | Master 5 / Ph.D. 5 |
| Research Field 연구분야 설명 | <p>Since its founding in 1976, INHA University's Law School has graduated many prominent legal scholars, judges and lawyers. Backed by the rich history, academic strength and reputation of INHA Law School, Chinese Law Center has progressed to become a leading institute in legal education and research in Korea. Within the complex is a comprehensive Law Library, moot court, computer labs and classrooms. Chinese Law Center of INHA Law School prides itself in its top-notch education programs and facilities and strives to provide the best learning conditions for its researchers.</p>  <p>Welcome researchers who want to do master's or/and doctorate degree of Corporation Law and then want to be a professor in China/Korea. In addition to the school scholarship, a teaching assistant scholarship can be provided.</p> | | | |
| Brief Record of Prof. Dr. Dr. Jung 약력 | Director of Chinese Law Center of INHA Law School | | | |
| | Vice Chairman of the Korea-China Society of Law | | | |
| | Ph.D. in Law (East China University of Political Science and Law, 2020) Ph.D. in Law (Korea University, 2013) LL.M (Northwestern Law School, 2003) | | | |
| Others 기타사항 | Attorney (N.Y. Bar Association, 2004) Attorney (Korean Bar Association, 1999) | | | |
| | You can contact us by mail, phone, email, or visit our office at any time for any request or inquire in Chinese/English/Korean. Contact Person: Prof./Dr. JUNG Young Jin(丁莹镇) Telephone: +82(0)10-6394-5050 E-mail: junglaw@inha.ac.kr WeChat ID: neovarsa | | | |



Introduction of Laboratory

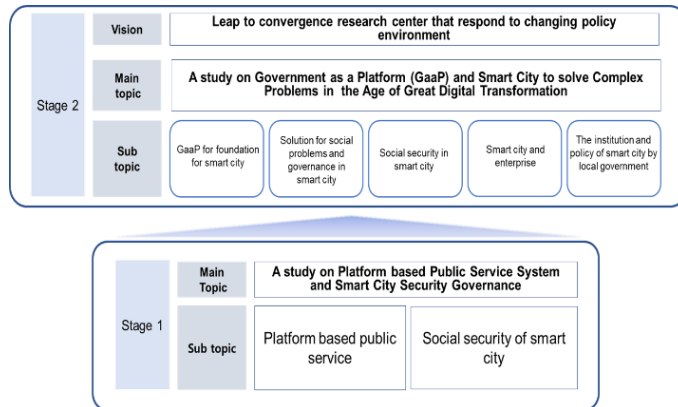
| | | | | |
|---|--|--------------------------|--------------------------------|--------------------------------|
| Name 성함 | Surname | Myeong | | |
| | Given Name | Seunghwan | | |
| Position 직급 | Professor | | Gender 성별 | ■ Male □ Female |
| Department 소속학과 | Public administration | | Major 소속전공 | Industrial security governance |
| Contact Information 연락처 정보 | Email | shmyeong@inha.ac.kr | | |
| | Telephone | +82)328607951 | | |
| | Home Page | https://inhacs.modoo.at/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | ■ Yes □ No | | Required Manpower 필요인력 수 | Master 3 / Ph.D 3 |
| Research Field 연구분야 설명 | ◎ Center for Security Convergence and eGovernance (CSCeG) was established to conduct e-Governance, smart city, various informatization issues, and convergence security research. ◎ The center aims to reveal policy agenda and draw policy implication in the age of digital transformation with focusing on Government as a Platform (GaaP) and smart city. | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | Bokhari, S. A. A., & Myeong, S. (2023). Influence of Government Innovation Initiatives on Responsive E-governance: An Empirical Analysis on Government Response to COVID-19 Pandemic in Pakistan. Lex localis-Journal of Local Self-Government, 21(4), 992-1019. | | | |
| | Myeong, S., & Bokhari, S. A. A. (2023). Building Participative E-Governance in Smart Cities: Moderating Role of Institutional and Technological Innovation. Sustainability, 15(20), 15075. | | | |
| | Bokhari, S. A. A., & Myeong, S. (2023). The Impact of AI Applications on Smart Decision-Making in Smart Cities as Mediated by the Internet of Things and Smart Governance. IEEE Access, 11, 120827-120844. | | | |



Others
기타사항

◎ CSCeG was selected for the Humanities and Social Research Institute project by National Research Foundation of Korea to deal with the research topics; Government as a Platform(GaaP), Smart city, social safety and security research.

◎ The center is conducting stage 2 (Main research topic: A study on Government as a Platform (GaaP) and Smart City to solve Complex Problems in the Age of Great Digital Transformation) after passing stage 1 evaluation at present.



◎ Five sub topics that include the issues for GaaP and smart city for stage 2 research purpose. The sub topics have each detail topic for in-depth research and each detail topic has complementarity.

- 1) *GaaP for foundation for smart city*: Conducting research on status of local smart city for local GaaP, analysis of the effect on application of new technology, various stakeholders in GaaP
- 2) *Solution for social problems and governance in smart city*: Conducting research on conceptualization of various social problems in smart city and civic engagement model like living lab for establishing citizen driven smart city
- 3) *Social security in smart city*: Conducting research on classification of various risk factor from smart city service and prediction and measures against risk factor of smart city
- 4) *Smart city and enterprise*: Conducting research on security status of the enterprises and behavior of security of employee with focusing on the enterprises that offer smart city service
- 5) *The institution and policy of smart city by local government*: Conducting research on barriers and solution in implementation of smart city and reorganization of local government for local smart city



Introduction of Laboratory

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|---|---|--|--------------------------------|--|
| Name 성함 | Surname | Kim (Oh) | | |
| | Given Name | Youngsoon (Youngsub) | | |
| Position 직급 | Dean, Professor, Director | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | The Convergence Institute for Multicultural Studies(CIMS): Department of Multicultural Education, Program in Humanities Therapy | | Major 소속전공 | Cultural Study, Multicultural Education, Humanities Therapy |
| Contact Information 연락처 정보 | Email | kimysoon@inha.ac.kr , yesoh@inha.ac.kr | | |
| | Telephone | 032-860-7867(Kim), 032-860-7907(Oh) 032-860-8741(CIMS Office) | | |
| | Home Page | 1. The Convergence Institute for Multicultural Studies http://www.cims.kr 2. Korean Association of International Culture Exchange http://kaice.kr 3. Humanities Convergence Therapy Center http://humanct.com/ | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | Required Manpower 필요인력 수 | (How Many) Master __1__ / Ph.D __9__ |
| Research Field 연구분야 설명 | 1. Multicultural Education - Multicultural Education Policy - Multicultural Leisure - Multicultural Counseling - Korean Language - Multicultural Economic Education - Multicultural Literacy - Multicultural Law - Multicultural Literary and Practice 2. Humanities Therapy - Narrative therapy - Psychotherapy and Communication - Art convergence therapy - Drama/Film convergence therapy - Music convergence therapy - Literature convergence therapy | | | |
| Three Recent Career | Theories and Scholars of Multicultural Education (Book Korea, 2017) | | | |



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|---|---|
| Achievements 업적 리스트 (최근 3 건) | Multicultural Education and Coexistence Humanities (DBbooks, 2017) |
| Others 기타사항 | <div data-bbox="699 293 1187 327"> Homo Narraticus (Paradigm Book, 2022) </div> <ol style="list-style-type: none"> 1. Department of multicultural education was established in 2011 in order to cultivate academic and practical leaders and experts in multicultural education by analyzing policies and practices necessary for social integration of foreigners residing in Korea in response to such changes and demands of the times. Faculty members consist of diverse majors from Social Education, Korean Language Education, and Arts and Sports. Courses include multicultural education theory, educational policy theory, multicultural curriculum theory, multicultural family child education and counseling, multicultural education leadership, Korean language and culture education theory, multicultural counseling, and multicultural welfare. Master/Ph.D degrees in education are granted if the required credits, major exams, thesis, etc. are completed. 2. Program in Humanities Therapy was established in 2018 in order to actively cope with integrative therapeutic approach to factors that threaten the physical and mental health of modern people in our rapidly changing society. This program aims to help modern people cope with physical and mental problems by utilizing various field of humanities, art and media, leading emotional recognition and rich lives as well as physical health. In connection with various studies such as pedagogy, medicine, psychology, sociology, and counseling studies, this program actively exchange knowledge and explore academic theories and treatment methods in depth. In addition, this program trains experts in music, art, dance, and literature through field-oriented clinical training in cooperation with related institutions such as nearby university hospitals, social welfare institutions, and community service and counseling centers. As humanities convergence counseling experts, graduates from this program will work in hospitals, special clinics, social welfare institutions, children and youth centers, cultural centers, rehabilitation centers, nursing homes, and research institutes. 3. Scholarship: Diverse opportunities of on-campus scholarships and off-campus scholarship may be provided including Inha Vision Scholarship, etc. |



Introduction of Laboratory

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|---|---|-------------------------|--------------------------------|--|
| Name 성함 | Surname | Cho | | |
| | Given Name | Young min | | |
| Position 직급 | professor | | Gender 성별 | <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female |
| Department 소속학과 | Design convergence | | Major 소속전공 | Graphic design |
| Contact Information 연락처 정보 | Email | megeneration@inha.ac.kr | | |
| | Telephone | 032-860-7898 | | |
| | Home Page | www.choym.com | | |
| Monthly Stipend Provided or Not 생활비 지급 의사 | () Yes (o) No | | Required Manpower 필요인력 수 | Master <u>1-2</u> / Ph.D. <u> </u> |
| Research Field 연구분야 설명 | All fields about visual communication design - Graphic design - Identity design - Brand strategy & design - Package design | | | |
| Three Recent Career Achievements 업적 리스트 (최근 세건) | 2020 - Brand Identity Design, INFACE | | | |
| | 2020 - Naming & Product (Vanding Machine) Design for Social Economy 'soft box' | | | |
| | Character Design of KFGO (Korea Federation of Former Government Officials) 'MARU & MAREE' | | | |
| Others 기타사항 | Brand Strategy Lab, Dept. Visual Communication, Inha University is Think-Tank for experimental visual solution through various design strategy, visual expression, and process by joining with undergraduate and graduated students as well as professor Cho, young min | | | |



Language Eligibility ①

Those who meet one of below 3 options are allowed to apply

- Applicants who have TOPIK level 3 or above
- Applicants who have completed level 4 or higher of the Korean language course established by university in Korea (level 5 or higher is needed for the department of which eligibility is TOPIK 4, level 6 is needed for the departments of which eligibility is TOPIK 5)

Language Eligibility ②

Those who meet one of below 4 options are allowed to apply

- Applicants who meet the “Language Eligibility ①” above
- Applicants who have English proficiency certificate of below score/level or above
TOEFL (IBT 71), TOEIC (700), IELTS (5.5), NEW TEPS(327)
- Applicants who want to apply for the digital business major must satisfy English Eligibility.
- Applicant who has completed degree program(Bachelor or Master) in USA, Canada, UK, Australia, New Zealand, India, Singapore, South Africa
- Applicant whose nationality is American, Canadian, British, Australian, New Zealander, Indian, Singaporean, South African