

Department of Nanobio Materials and Engineering(DNE) World Class University (WCU)

Major Research Areas

- > Neuromorphic Devices
- > Displays and artificial retina
- > Flexible Energy and Storage
- > Bio-Interfaces
- > Nanobio Characterization
- > Nanobio Information Processes

The Department of Nanobio Materials and Engineering (DNE) is part of the World-Class University (WCU) program of the National Research Foundation (NRF) in Korea and is supported by the Korean Ministry of Education, Science and Technology (MEST). A total sum of 30 Million Dollars for 5 years has been awarded to the DNE at the Gwangju Institute of Science and Technology (GIST). This interdisciplinary program involves faculty from three departments: the Departments of Materials Science and Engineering, Information and Communication, and Mechatronics at GIST and also 10 international faculty from different universities all over the globe. All these faculty members are teaching and collaborating for excellence in research for nano-bio-info fusion technology (NBIT).

In our aging society, bionics technology is very important and needed to complement and replace sensing and moving functions of the human body. For a systematic technology researching bionics, excellent facilities to provide the educational system for NBIT fusion technology as well as the human infrastructure to carry out world-class fusion technology research are needed.

Our department is aiming to develop flexible, wearable, implantable materials and systems. Furthermore, our department maximizes the capability of research in the field of nano-biomaterials and electronics engineering with world-class faculty of different scientific background. We develop the technology of materials and devices for nanobio information through the multi-educational NT-BT-IT system. Our department provides Master and Ph.D. courses for the development of modern bionics fusion technology.

Event schedule

2nd September

Reception

Place: Myoungga won

Time: 18:00~19:40

Concert - Chopin 200th Anniversary Concert

Place: Second Floor (Dasan Hall) at GIST Oryong Hall

Time: 20:00~

3rd September

Invited talks, Poster Presentation

Place: Network lecture Room (#101), Oryong Hall, GIST

Time: 09:00~21:00

4th September

Panel Discussion

Place: Network lecture Room (#101), Oryong Hall, GIST

Time: 09:00~10:40

Excursion

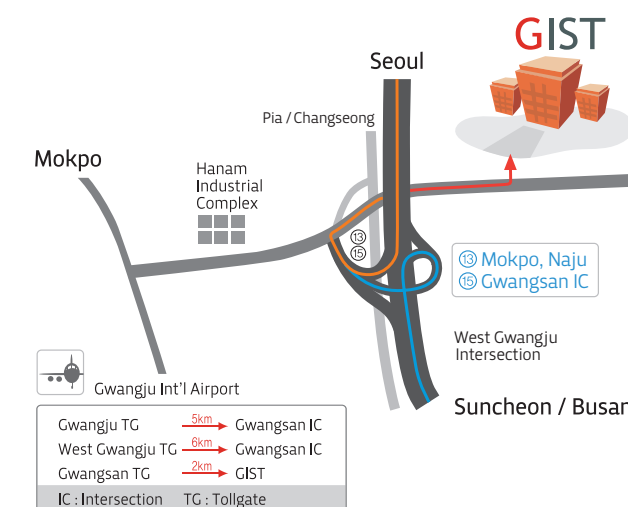
Place: Namwon

Time: 11:00~

3rd
WCU Symposium on
Nanobio Materials and
Electronics (wcu-03)

20
10

DIRECTION



TRANSPORTATION

By car

- From Seoul
(Honam express way, orange line in the above map):
Gwangsan IC→Chomdan→GIST
- From Suncheon
(Honam express way, blue line in the above map):
Gwangsan IC→Chomdan→GIST

By airplane

- To Gwangju airport
- Take a taxi to GIST.
It will take 30 minutes and cost around 8,000 Won

3rd WCU Symposium on Nanobio Materials and Electronics (wcu-03)

Date: 2010. 9. 2(Thu) ~ 4(Sat)

Place: Oryong Hall(Rm. 101),

Gwangju Institute of Science and Technology (GIST)

Support: Department of

Nanobio Materials and Electronics, GIST

Contact us

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3rd
WCU Symposium on
Nanobio Materials and
Electronics (WCU-03)

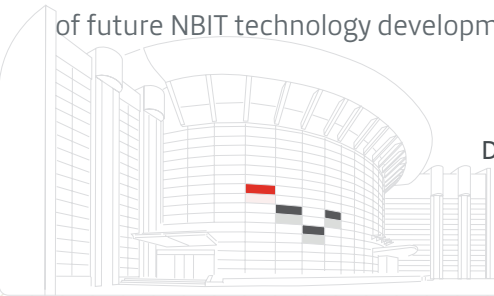
I · N · V · I · T · A · T · I · O · N

광주과학기술원 나노바이오재료전자공학과는 교육과학기술부의 세계 수준의 연구중심 대학(WCU) 육성 프로그램의 일환으로 출범한 학과입니다. 금번 제 3회 WCU 나노바이오재료전자공학 심포지움은 관련 분야의 국내외 전문가들의 연구 분야에 대하여 공유하며, 앞으로의 국제적인 공동 연구의 방향과 전망에 대해 토론하고자 합니다.

광주과학기술원 WCU 프로그램의 성공적인 발전과 나노-바이오-재료 및 전자 분야의 융합 학문 및 새로운 미래 지향적 기술 개발을 위한 연구 전력을 모색하고 전문가 의견을 수렴하기 위하여 마련한 자리이오니 부디 참석하시어 자리를 빛내주시기 바랍니다.

광주과학기술원 나노바이오재료전자공학과

The Department of Nanobio Materials and Electronics (DNE) has been created as a part of the World-Class University (WCU) program initiated by the Korean Ministry of Education, Science, and Technology (MEST), which invites international scholars, who possess advanced research capacities in order to collaborate with Korean faculty members and establish new academic programs in key growth-generating fields. For the successful development of the GIST WCU program, we prepared the 3rd Symposium on Nanobio Materials and Electronics to share about the research areas of the experts in the field and discuss about the prospects of the international collaboration research. The symposium will be a significant step for the successful development of fusion technology of NT, BT, and IT. We will be honored to invite you and to share the expertise of future NBIT technology development.



Department of Nanobio Materials and Electronics (DNE), GIST
Kurt E. Geckeler, Chair of DNE

3rd WCU Symposium on Nanobio Materials and Electronics (WCU-03)

P · R · O · G · R · A · M

Session	Time	Speaker	Title
1	Chair: Kurt Geckeler		
	08:30 ~ 08:35	Sung Yang (GIST)	Opening: Organizer
	08:35 ~ 08:40	Kurt E. Geckeler (GIST)	Opening: Chair
	08:40 ~ 09:10	Kamal Alameh (GIST)	Photonic technologies for biosensing applications
	09:10 ~ 09:40	Tak Hee Lee (GIST)	Molecular transistors and Polymer Memory Devices
	09:40 ~ 10:10	Hyun Sang Hwang (GIST)	Overview of Materials and Process Aspect of Cross-point RRAM
	10:10 ~ 10:30	Break	
	10:30 ~ 11:00	Harald Fuchs (GIST)	From self organized molecular systems to biomimetic surfaces
	11:00 ~ 11:30	Amarnath Maitra (University of Delhi)	Enzyme loaded Hollow gold nanoparticles have potential application in Cancer Nanotechnology
	11:30 ~ 12:00	Oral poster presentation I: No.1~10	
12:00 ~ 13:00 Lunch			
2	Chair: Byoung Ki Cho		
	13:00 ~ 13:30	Marc J. Madou (UNIST)	Biomimetics and Bioengineering
	13:30 ~ 14:00	Li Xin Xin (Chonnam National Univeristy)	Nano effects used in micro-cantilever bio/chemical sensors
	14:00 ~ 14:10	Break	
	14:10 ~ 14:40	Jeremy Ramsden (Cranfield University)	Metrology of the nano/bio interface: exquisite sensitivity achieved using optical waveguides
	14:40 ~ 15:10	Hideomi Koinuma (Pusan National University)	Combinatorial laser MBE processing of nano functional hard and soft materials
	15:10 ~ 15:40	Oral poster presentation II: No.11 ~ 20	
	15:40 ~ 16:00	Break	
3	Chair:		
	16:00 ~ 16:30	Jae-Hyung Jang (GIST)	InP and GaAs based High Speed Electronic Devices and Optical Detectors
	16:30 ~ 17:00	Hiroyuki Nishide (GIST)	Rechargeable Batteries and Photovoltaic Cells Based on Radical Polymers
	17:00 ~ 17:30	Yong-Jin Pu (Yamagata University)	Materials Chemistry for Highly Efficient Organic Light Emitting Diodes
	17:30 ~ 18:00	Dong Yu Kim (GIST)	Novel Approach to Low-cost and High-efficiency Organic Photovoltaic Cells
	18:00 ~ 18:30	Oral poster presentation III: No.21 ~ 36	
	18:30 ~ 19:30	Poster session	
	19:30	Dinner	

P · O · S · T · E · R

Session	Paper	Name	Advisor	Title
1	1	Jae Seong Park	Sung Yang	Red Blood Cells Aggregometer using an Air pressure driven disaggregation technique
	2	Minsu Shon	Sung Yang	A floating microsensor for microfluid temperature sensing
	3	Tae Young Jeon	Giyoong Tae	OVERSULFATATION of HEPARIN
	4	Jong Hyun Lee	Giyoong Tae	Tumor Targeting of Chitosan-Conjugated, Pluronic-Based Nano-Carrier
	5	Jae Yong An	Jong-Hyun Lee	Characterization of eye-shaped coplanar variable focus lens with a spherical encapsulation
	6	Giseok Kang	Jong-Hyun Lee	Impedance Measurement of Normal and Cancerous Human Breast Cells Using Microfluidic Tunnel Structure
	7	Yoon-hyoung Hur	Jae-Suk Lee	Living Anionic Polymerization of the Amphiphilic Monomer 4-(4-Vinylphenyl) pyridine
	8	Santosh Kumar	Jae-Suk Lee	In-situ Synthesis of Stable Aqueous dispersion of Silver and Copper Nanoparticles by Polymerizing a Surfmer
	9	Un Ko	Jae-Suk Lee	Cross-Linking Density Effect of Fluorinated Aromatic Polyethers for Polyelectrolyte Membrane
	10	Shah Priyank N.	Jae-Suk Lee	Study of Helical Conformation Change in Poly(n-Hexyl Isocyanatel) by Changing Initiation Systems
2	11	Chunhum Cho	Byoung Hun Lee	Influence of Chemical Processing on the Raman Analysis of Graphene
	12	Changgoo Kang	Byoung Hun Lee	Simple Fabrication Method of Graphene Nano Ribbon using ZnO Nanowire Hardmask
	13	Kyungah Seo	Hyunsang Hwang	Analogue memory and STDP characteristics in TiO ₂ bi-layer resistive switching device for Neuromorphic application
	14	Sangsu Park	Hyunsang Hwang	The effect of Oxygen-deficient Layer on Resistive Switching of Pr _{0.7} Ca _{0.3} MnO ₃ for reliable ReRAM application
	15	Junghwan Kim	Kwanghee Lee	The role of buffer layers in inverted polymer solar cells
	16	Sooncheol Kwon	Kwanghee Lee	Efficiency Enhancement of Low-bandgap Polymer based Solar Cells using TiOx Optical Spacer
	17	Na-Yeong Kim	Seong-Ju Park	Structural and optical properties of ZnO nanowires with quatum dots for flexible light-emitting diodes
	18	Jae-Yi Chun	Seong-Ju Park	Surface morphology of GaN film with Cr mask etched by inductively coupled plasma
	19	Sangchul Lee	Takhee Lee	Enhancement of charge injection in pentacene field effect transistors with patterned graphene electrodes
	20	Su Yong Lee	Do Young Noh	Influence of process conditions on pattern quality in hard x-ray lithography
3	21	Seung-Han Kim	Jae-Hyung Jang	Printed Dipole Antenna with a 1-D EBG Ground Plane
	22	Min-Su Park	Jae-Hyung Jang	Enhancement of Optical Gain in Floating-Base InGaP/GaAs Heterojunction Phototransistors
	23	Seung-Hun Lee	Jong In Song	All-optical Frequency Upconversion Technique Using Cross-Polarization Modulation in a Semiconductor Optical Amplifier for Radio-over-Fiber Systems
	24	Chung-jae Lee	Jong In Song	A Power Efficient Neural Amplifier for Neural Recording Application
	25	Jaesun Hwang	Hyuk Lim	A Receiver-Centric Multi-Channel MAC Protocol for Wireless Networks
	26	Wooyeol Choi	Hyuk Lim	Carrier Phase Adjustment for Multiple Access Communication Systems with Multi-Packet Reception Capability
	27	Byung Hoon Na	Yong Tak Lee	Uniform modulation of an asymmetric Fabry-Perot reflection modulator for optical range imaging sensor applications
	28	Sung Jun Jang	Yong Tak Lee	Anti-reflective graded index structure for thin film a-Si solar cells
	29	Wonsung Choi	Hiroyuki Nishide	Radical Polymer/SWNT Nanocomposite Toward a Transparent Charge-Storable Material
	30	D. Joseph	K. E. Geckeler	Synthesis and Surface-Enhanced Raman Scattering of-Triangular Gold and Noble-Metal Core-Shell Nanoprisms
	31	Yeonju Lee	K. E. Geckeler	Biocompatible Gold Nanoparticles: Microwave-Assisted Synthesis and Cytotoxicity
	32	T. Premkumar	K. E. Geckeler	A facile Synthesis of Gold Nanoparticles Using Cucurbituril and Their Catalytic Activity
	33	Nour F. Attia	K. E. Geckeler	Inorganic Nanotubes and Flammability: Effect on the Properties of Acrylonitrile-Butadiene-Styrene Copolymer
	34	F. R. Ahmed	K. E. Geckeler	A Novel Inorganic Nanotube-Biopolymer Composite for Colon-Specific Anticancer Drug Delivery
	35	Sung H. Kim	K. E. Geckeler	A Facile Synthesis Method for Silver Nanoparticle-Polymer Composites and Their Electrically Bistable Properties for Thin-Film Devices
	36	Chung-Hee Kim	Jae-Suk Lee	New Cross-Linkable Sulfonated Poly (arylene ether) Copolymers Using Ethynylhydroquinone for Polymer Electrolyte Membrane (PEMether)