

## COE紹介と拠点メンバーによる研究紹介

	Member	Title
<b>Global COE in Secure-Life Electronics</b>		
1	保立 和夫(拠点リーダー)	Recent Progress in Secure-Life Electronics
<b>Sensing Research CORE</b>		
1	保立 和夫	Recent Progress in Fiber Optic Sensors for Security Life and Society
2	何 祖源	Synthesis and Sensing Applications of Dynamic Gratings in Optical Fibers
3	山下 真司	Novel Mode-Locked Fiber Lasers for Telecom and Sensing Applications
4	廣瀬 明	Brain-Inspired Millimeter-Wave / Microwave Imaging Technology and a Landmine Visualization System
5	浅田 邦博	Analysis on Light Attenuation through Multi-Metal-Layers for CMOS Image Sensors on System LSIs
6	藤田 博之	Molecular Handling and Sensing for Advanced Biomedical Technology
7	田畑 仁	Nano Bio-Oxide (BIOxide) Electronics for Secure Life
8	齋藤 宏文 ①	3D-LIDAR with Multi FOVs Telescope for Planetary Explorer
9	齋藤 宏文 ②	Feedback-Based Control Design for Agile and Flexible Satellite“ASTRO-G”
10	橋本 樹明	Secure Life from Space and in Space – Research Progress in 2008 –
<b>Information Processing and Network Research CORE</b>		
1	柴田 直	Computing Based on the Physics of Nano Devices —A Beyond-CMOS Approach to Systems—
2	藤島 実	Millimeter-Wave CMOS Integrated Circuits and Their Secure-Life Applications
3	金田 康正	Low Voltage Power Supply Incorporating Ceramic Transformer
4	中野 義昭	Progress of Semiconductor Integrated Photonics -Research toward Digital Photonics-
5	種村 拓夫	Scalable Semiconductor Integrated Optical Switch for Future Photonic Network
6	菊池 和朗	Coherent Optical Communications toward an Ultimate Use of Optical Carriers
7	五十嵐 浩司	Optical Signal Processing by Phase Modulation and Subsequent Spectral Filtering Aiming at Applications to Ultrafast Optical Communication
8	森川 博之①	A Novel Concept of Hybrid Optical Network Architecture Combining Multi-Wavelength Packet and Circuit Switching for Future WDM
9	森川 博之②	Application-Oriented Wireless Sensor Networks
10	南 正輝	Energy-aware Network Architecture
11	小川 剛史	Mobile Sensor Control for Reducing Power Consumption in Sparse Sensor Network
12	関谷 勇司	Design and Architecture of Distributed Active Measurement Framework
13	峯松 信明	Speech Structures and Its Application for Realizing Human-like Speech Processing on Machines
14	杉本 雅則	Humam Computer Interaction Technologies for Secure Life

15	近山 隆	Computational Intelligence for Supporting Secure Life
16	伊庭 齊志	Evolving Hardware and Software for Artificial and Biological Systems
17	相田 仁 ①	Information Systems for Supporting User Communication
18	相田 仁 ②	Contents Distribution System Utilizing Information on P2P Networks
19	若原 恭	Assignment of Channels and Addresses for Mobile Ad-hoc Network (MANET)
20	佐藤 周行	Service Framework Based on the Grades of IdPs and SPs Toward Security Trust Engineering
<b>Actuation and Control Research CORE</b>		
1	堀 洋一／吳 世訓	Eco- and Human-friendly Motion Control for Support of Secure Life
2	橋本 秀紀	Present State of Intelligent Space – Implementation of RT for our Secure-Life –
3	古関 隆章	Evaluation of Train Reschedules by Taking Advantage of Flexibility of Quadruple Track
4	久保田 孝	Field Robotics Technology for Secure System from the Earth to the Space
5	小田 哲治	Non-Thermal Plasma Process for Volatile Organic Compounds – New Catalyst and Waveform Effect –
6	小野 亮	Environmental Protection and New Energy Technologies for Secure Life
7	日高 邦彦	Advanced Measurement Technologies for Better Understanding of Electrical Discharge Phenomena
8	熊田 亜紀子	Dielectric Heating of PCBs by Microwave Irradiation Leading to Dechlorination
9	石井 勝	Development of Standard of High Voltage Impulse in Japan
10	大崎 博之	Impact of High-Temperature Superconductors on Electrical Power Equipment
11	小野 靖	Ion and Electron Heating Characteristics of Magnetic Reconnection in TS-3 and UTST Merging Startup Experiments
12	山地 憲治 ①	Synergies in Energy System: A Case Study of Plug-in Hybrid Electric Vehicle and Wind Power Combination
13	山地 憲治 ②	Evaluation of Distributed Generation Using an Energy System Model Considering Electricity and Gas Grids in Kanto Region
14	横山 明彦 ①	Secure Life Supported by an Innovative Power Supply System – Toward “Ubiquitous Power Grid” –
15	横山 明彦 ②	Improved Evolutionary Programming for Transient and Voltage Stability Constrained Optimal Power Flow
16	馬場 旬平 ①	High Power Quality Energy Supply for Islanding Operation of a Microgrid
17	馬場 旬平 ②	Basic Study on Transformer Type Superconducting Fault Current Limiter with YBCO Thin Film
<b>Functional Devices and Materials Research CORE (I)</b>		
1	大津 元一	Optical Near-Field Interactions and Their System Applications for Security
2	八井 崇	ZnO Nanorods Growth Using Metal-Organic Vapor Phase Epitaxy for Nanophotonic Device Applications
3	加藤 雄一郎	Electrically Driven Thermal Light Emission from Individual Single-Walled Carbon Nanotubes
4	杉山 正和	Selective Epitaxial Growth of III-V Layer on Si for The Integration of Multiple Functions on a Si Platform
5	竹中 充	Ge Based Nano Electro-Optic Integrated Circuits for Intrachip Optical Interconnections

6	高木 信一	Ge/III-V Channel CMOS Technologies
7	池田 誠	A Variation Tolerant Inductive-Coupling Transceiver Design for System-on-Glass
8	竹内 健	Highly Scalable Fe(Ferroelectric)-NAND Cell with MFIS(Metal-Ferroelectric-Insulator-Semiconductor) Structure for Sub-10 nm Tera-Bit Capacity NAND Flash Memories
9	田中 雅明 ①	Magneto-Optical and Magneto-Transport Properties of Amorphous Ferromagnetic Semiconductor $Ge_{1-x}Mn_x$ Thin Films
10	田中 雅明 ②	Planar Hall Effect and Magnetic Anisotropy in a Mn delta-doped GaAs/p-AlGaAs Heterostructure
11	三田 吉郎	Bio-Inspired Micro and Nano Electro Mechanical Systems: DRIE devices and Autonomous Distributed Microrobots
12	藤田 昌宏	FLEC: A System-Level Verification, Analysis, Debugging Framework for Highly-Reliable System-on-Chips
<b>Functional Devices and Materials Research CORE (II)</b>		
1	荒川 泰彦/岩本 敏 ①	Controlling Light-Matter Interactions in Photonic Crystals and Their Applications
2	荒川 泰彦/岩本 敏 ②	InAs Quantum Dot Lasers Grown by MOCVD and MBE on GaAs Substrate by the Antimony-Mediated Surfactant Growth
3	平川 一彦	Physics and Applications of Single Quantum Dot Transistors
4	櫻井 貴康	1/5 Power Reduction by Post-Fabrication Tuning with Fine-Grained Body Biasing
5	平本 俊郎	Silicon Nanowire MOSFETs: Measurements of Mobility and Strain Effects
6	高宮 真	Ultra Low Power Inorganic-Organic Hybrid Circuits and Digital-Analog Mixed Circuits for Secure Life
7	年吉 洋	Research and Development of RF-MEMS Switches for Adaptive Phased Array Antenna Systems
8	河野 崇	Mathematical-Model-Based Silicon Neuron Circuits
9	田島 道夫	Innovative Characterization Technique for High-Efficiency and Highly-Reliable Solar Cells
10	高橋 琢二	Nano-probing Techniques for Electrical and Optical Characterization of Nanostructures