Department of Nanovision Technology

- Nano device and system in image engineering
- Photon and electron physics in nanoregion and its device applications
- Optical properties of polymers and dielectric materials in nanoregion
- Optoelectronics

Toru Aoki
Professor

Research Area
Imaging technology of X-ray, gamma-ray and neutron.

Research Detail
We research and develop the imaging devices, sysytems and its application for invisible light especially X-ray, gamma-ray and neutron from the base to practical use.

Hiroshi Inokawa
Professor

Research Area
Semiconductor Engineering

Research Detail
Through the use of nanodevices, such as single-electron transistors, we are researching low-power high-density circuit/system architectures. Since the nanodevices can be highly sensitive sensors, we are trying to apply them to single-photon detection, etc.

Yukinori Ono
Professor

Research Area
Semiconductor nanodevices

Research Detail
We are developing the technologies for manipulating single charges, spins, and phonons in silicon.

Akihiro Ishida
Professor

Research Area
semiconductor physics, device

Yoshinobu Ebisawa
Professor

Research Area
Visual Information Engineering

Research Detail
Developments of video-based pupil detection technique and of pupil detection-based methodology and implementation (e.g., eye-gaze and head pose detection, and drowsiness detection) for human interaction and monitoring are done for the improvement of welfare medical treatment and safe driving.

Kamen Kanev
Professor

Research Area
Human Computer Interfaces: Vision Information Processing and Computer Graphics

Research Detail
Surface Based Interactions: Research on Surface Communication Carriers and its Application

Shoji Kawahito
Professor

Research Area
Imaging Semiconductor Devices and Systems

Research Detail
We are investigating imaging semiconductor (CMOS) devices with advanced performance and functions for scientific, industrial and biomedical applications.
Department of Nanovision Technology

Masaaki Nagatsu
Professor
Hamamatsu

Research Area
Plasma Science, Plasma Application

Research Detail
We have been carrying out research on the development of various plasma processes based upon plasma science and their application to nanotechnology and bio-medical fields.

Masayuki Nakamoto
Professor
Hamamatsu

Research Area
Vacuum Nanoscience, MEMS, Display, Advanced Materials

Research Detail
We have been doing research on Super Reality 3D FED/MEMS Displays, Vacuum Nano/MEMS Devices for Aerospace, Atomic Power and Harsh Environments, Vacuum Nano Power Devices, Advanced Materials for MEMS and Sensors.

Gen Hashiguchi
Professor
Hamamatsu

Research Area
Micromachining, Sensor

Research Detail
We have focused on MEMS design theory and its application for development of integrated MEMS with semiconductor devices.

Kazuhiko Hara
Professor
Hamamatsu

Research Area
Semiconductor engineering, Solid-state physics

Research Detail
We have been developing unique light-emitting materials based on the semiconductor nanotechnology aiming at their application for novel light sources and displays.

Norihisa Hiromoto
Professor
Hamamatsu

Research Area
Terahertz technology, Terahertz sensor, Infrared technology, Light scattering detection

Research Detail
Research on terahertz (THz) sensor and THz time-domain spectrometer to develop THz-wave application, and airborne particle detection by light scattering to protect atmospheric environment against pollution.

Vygantas Mizeikis
Professor
Hamamatsu

Research Area
Applied optics, laser fabrication, micro-/nano-photonics

Research Detail
Laser fabrication and characterization of photonic micro-/nano-structures, modification of materials by femtosecond laser pulses.

Hidenori Mimura
Professor
Hamamatsu

Research Area
Vacuum Nanoelectronics

Research Detail
Basic research for nanovision imaging devices such as an ultra fine field emission display and an ultra fine CdTe X-ray image sensor

Hiroya Ikeda
Associate Professor
Hamamatsu

Research Area
Semiconductor engineering, Semiconductor device engineering, Semiconductor quantum physics

Research Detail
We are investigating new-functional and high-efficient devices using Si nanostructures and recently focusing on thermoelectric devices.
### Department of Nanovision Technology

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<tr>
<th>Name</th>
<th>Position</th>
<th>Research Area</th>
<th>Research Detail</th>
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</thead>
<tbody>
<tr>
<td>Wataru Inami</td>
<td>Associate Professor</td>
<td>Semiconductor engineering, Crystal growth, Nanomaterial engineering</td>
<td>We are working on broad CNT researches including growth, fabrication of CNT constructions (fibers), CNT composites and CNT electronics.</td>
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<tr>
<td>Akihisa Ogino</td>
<td>Associate Professor</td>
<td>Plasma Science, Plasma Application</td>
<td>We have been researching plasma processing that aims at modifying the physical and chemical properties of a surface and also fabricating nanomaterials.</td>
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<tr>
<td>Keiichiro Kagawa</td>
<td>Associate Professor</td>
<td>CMOS image sensors, information photonics</td>
<td>Biomedical CMOS image sensors and computational imaging based on multi-aperture optics and advanced CMOS image sensors for ultra-fast or ultra-high-sensitivity imaging.</td>
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<tr>
<td>Minoru Watanabe</td>
<td>Associate Professor</td>
<td>Optical information processing, Very-large-scale integrated circuit(VLSI), Space embedded system, Optoelectronic device, Reconfigurable device</td>
<td>Development of Optoelectronic devices including optical information processing technologies and very-large-scale integrated circuits(VLSIs).</td>
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<tr>
<td>Yoichiro Neo</td>
<td>Associate Professor</td>
<td>Vacuum nanoelectronics</td>
<td>Cathode and physics: Field emission cathode, photocathode, etc Apprication:High frequency Vacuum tube, image tube etc</td>
</tr>
<tr>
<td>Yoku Inoue</td>
<td>Associate Professor</td>
<td>Semiconductor engineering, Crystal growth, Nanomaterial engineering</td>
<td>We are working on broad CNT researches including growth, fabrication of CNT constructions (fibers), CNT composites and CNT electronics.</td>
</tr>
<tr>
<td>Atsushi Ono</td>
<td>Associate Professor</td>
<td>Near-field Optics, Plasmonics</td>
<td>We design and fabricate metallic nanostructures for the efficient surface plasmon excitation. It is applied for the development of super-resolution imaging device and high-sensitive photodetectors.</td>
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<tr>
<td>Masanori Takeda</td>
<td>Lecturer</td>
<td>Terahertz technology, submillimeter-wave circuit, superconducting electronics</td>
<td>Toward terahertz (THz) applications, we have been studying on system stabilization of THz time-domain spectrometer and THz imaging technology.</td>
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Masahiro Hori
Lecturer
Hamamatsu

Research Area
Semiconductor engineering, Quantum electronics

Research Detail
We are developing a novel technique towards the manipulation of electronic charges and spins based on a quantum level in a silicon transistor.