Center for Micro-Nano Mechatronics

- Nano control engineering
- Nano measurement engineering
- Nano design and manufacturing
- Nano materials science
- Bio/Medical applications

Graduate School of Engineering, NAGOYA UNIVERSITY

Outline of Center for Micro-Nano Mechatronics

Micro and nanotechnology has become very important in creating innovative technologies in the fields of ultra high precision mechatronics technology, information technology, bio-medical technology and energy/environmental technology, which are expected to lead the 21st century industrial revolution. Since Nanotechnology holds a leading position in the advance of mechanical engineering, material sciences, life sciences, and electronics, we established “Center for Micro-Nano Mechatronics” at Graduate School of Engineering, Nagoya University in 2008 with the aim of applying nanotechnology to practical systems in micro-nano scale from a system approach viewpoint.

Prof. Toshio FUKUDA
Director of Center

Now as leading center in the world for system approach, we promote researches in four basic fields, Nano control engineering, Nano measurement engineering, Nano design and manufacturing, and Nano materials science and conduct an applied research encompassing all these basic research fields to attend to the needs of the advanced medical engineering. We also lead the innovative research field of micro-nano mechtronics and promote the collaborative researches between industry and our center.

We are devoted to create environmentally friendly materials and machines with novel functions and are committed to establish analysis and design technology for them by emphasizing the micro/nano world.

Research projects

Our Center promotes basic researches and applied researches as follows.

【Basic research】

(1) Nano control engineering (Control in nano-region)
(2) Nano measurement engineering (Measurement in nano-region)
(3) Nano design and manufacturing (Design and production in nano-region)
(4) Nano materials science

【Applied research】

Our Center conducts applied researches encompassing all these basic research fields to attend to the needs of the advanced technologies, such as medical engineering, and also promotes the innovative researches for micro-nano mechtronics.

Nano control engineering

Manipulation and motion control of molecules, biological cells, and living tissues

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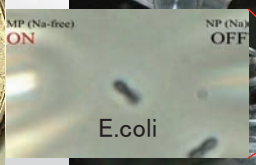
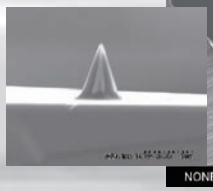
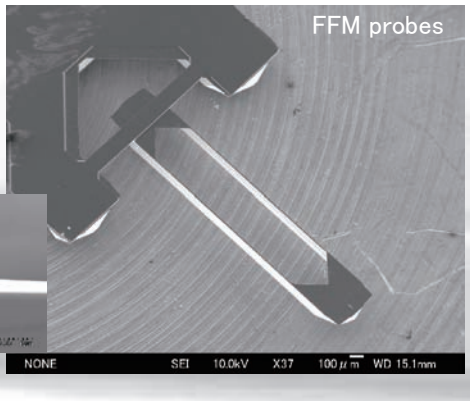


Prof. Toshio FUKUDA
Prof. Goro OBINATA
Prof. Fumihito ARAI
Assistant Prof. Masahiro NAKAJIMA

Nano measurement engineering

Developments of sensing technologies for atoms, molecules, and biological cells

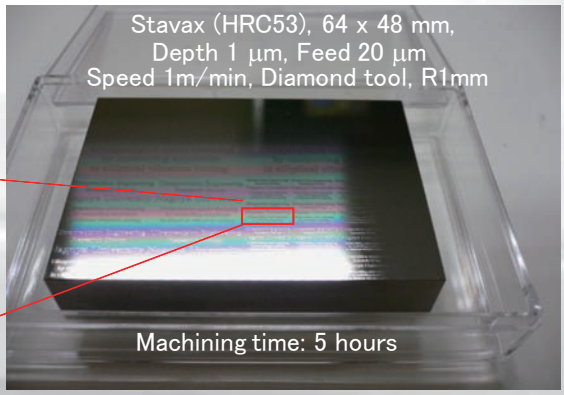




Prof. Kenji FUKUZAWA
Prof. Tomohide NIIMI
Prof. Yang JU
Prof. Akihiro SASOH
Prof. Jiro USUKURA

Nano design and manufacturing

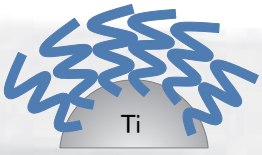
Developments of ultra precision machining and MEMS fabrication for producing micro-nano devices

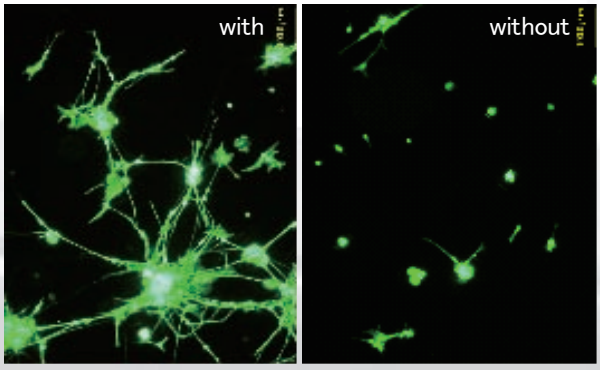


Prof. Eiji SHAMOTO
Prof. Kazuo SATO
Prof. Ichiro NARUSE
Associate Prof. Mitsuhiro SHIKIDA

Nano materials science

Developments of nano materials and thin-film, and characterization of these materials





Cultured Dorsal Root Ganglion cells on the Ti disks covered (left) and not covered with (right) polyelectrolyte brush

Prof. Osamu TAKAI
Prof. Masazumi OKIDO
Prof. Nobutada OHNO
Prof. Noritsugu UMEHARA

Access

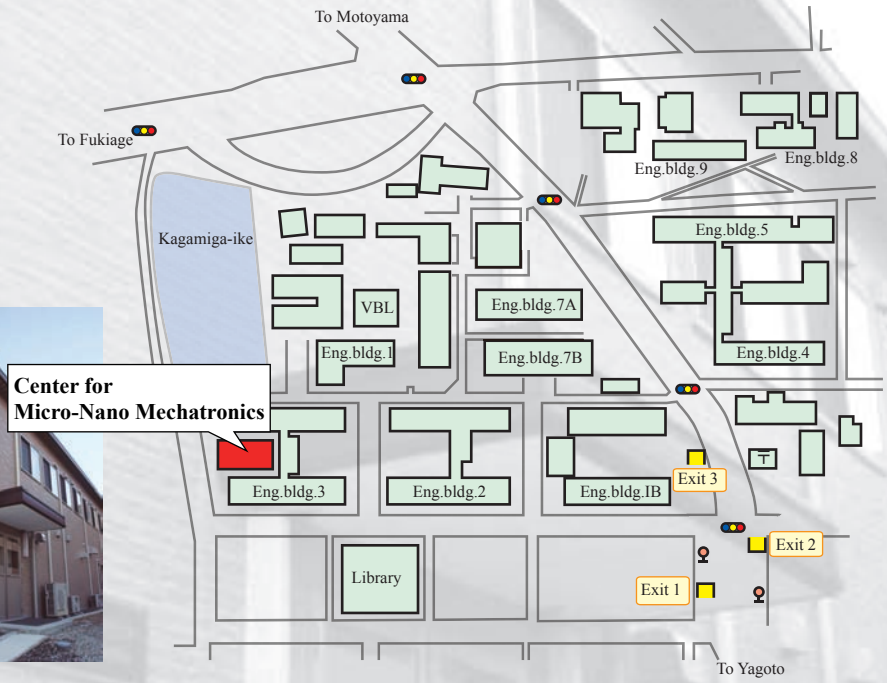
① JR Nagoya Station → Nagoya Daigaku Station（Meijo line）

At Nagoya station, take Subway Higashiyama Line (direction Fujigaoka) and transfer to Meijo Line (clockwise) at Motoyama station (14 minutes). Get off at Nagoya Daigaku station (2 minutes).

② Nagoya Daigaku Station → Center for Micro-Nano Mechatronics

It takes another 5 minutes to get to Center on foot from Exit 3, at Nagoya Daigaku station. Center for Micro-Nano Mechatronics is located next to Engineering building 3.

Nagoya University（Higashiyama Campus）



Contact us

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