



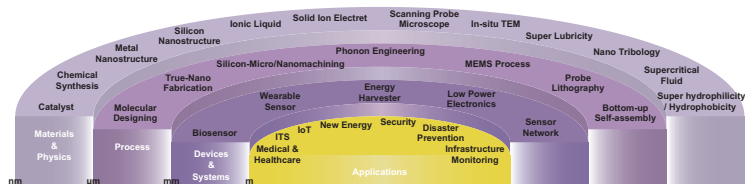
Centre for Interdisciplinary Research on Micro-Nano Methods (CIRMM)



Materials Engineering
Precision Engineering Department
Department of Advanced Interdisciplinary Studies
Department of Electrical Engineering and Information Systems

<http://www.cirmm.iis.u-tokyo.ac.jp/>

MEMS and True-Nano Technology for Cyber-Physical-System (CPS) Implementation



True Nano Physics

Novel devices beyond the scale
of conventional principles

Nano Fabrication

In-house Fab-Lab for
cutting-edge manufacturing

Cyber Physical

MEMS sensors connecting
between cloud and real world

We focus on exploring new methods of detection, imaging, selection and filtering of molecules and atoms, harvesting of energy from the nanometric level, control of friction, fabrication, diagnosis and even treatment. In parallel, we envisage large scale implementation of things small, such as sensors, energy harvesters, optical and diagnostic nano tools. As the name of the centre implies, we put emphasis on exploring new Methods, as opposed to improving existing techniques.

Kawakatsu Lab. Dept.2
Ce-B02



Coupling to the Nano Regime

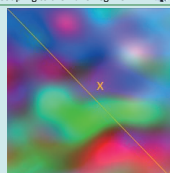
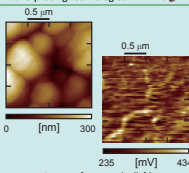


Image of silicon acquired with
the Colour AFM

Takahashi Lab. Dept.3
Ee-305



Nano-probing Technologies

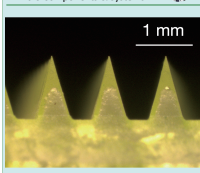


Images of topography (left)
and photovoltage (right)
on Cu(In,Ga)Se₂ solar cell

Kim Lab. Dept.2
De-B02
Dw-304



Micro Components & Systems

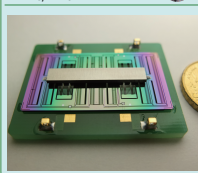


Porous Microneedles for sensing

Toshiyoshi Lab. Dept.3
Ee-308



MEMS/NEMS

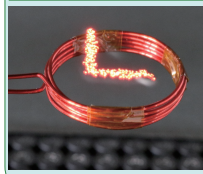


MEMS environmental vibrational
energy harvester

Takamiya Lab. Dept.3
Ew-206



Integrated Power Management

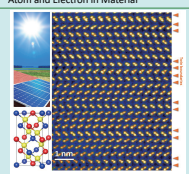


Millimeter-scale LED based on
acoustic levitation for mid-air display

Mizoguchi Lab. Dept.4
Fe-312



Understanding Role of
Atom and Electron in Material

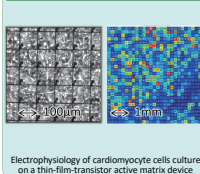


Atomic resolution image of multiple-twin
boundary in photo voltaic cell material

Tixier-Mita Lab. Dept.3
Ee-308



Bio CMOS/MEMS Platforms

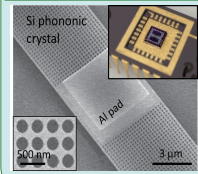


Electrophysiology of cardiomyocyte cells culture
on a thin-film-transistor active matrix device

Nomura Lab. Dept.3/
RCAT
Fe-207



Nanoscale Heat Transfer
and Thermoelectrics



Nanoscale heat transfer and thermoelectrics
energy harvester

