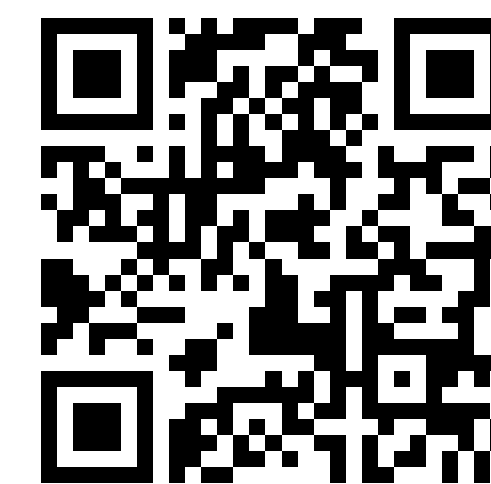




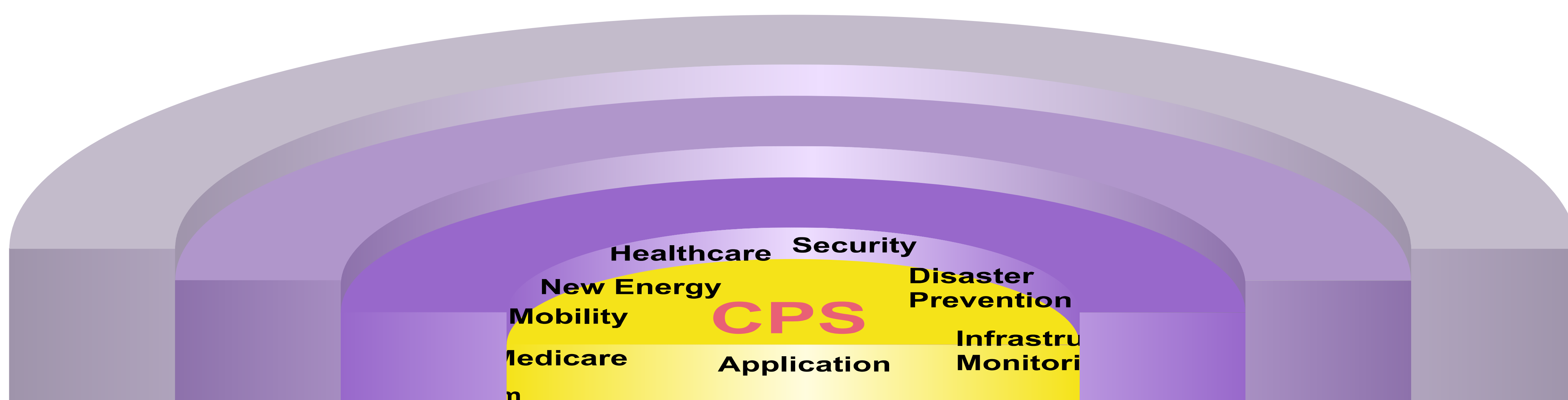
# Centre for Interdisciplinary Research on Micro-Nano Methods (CIRMM)



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


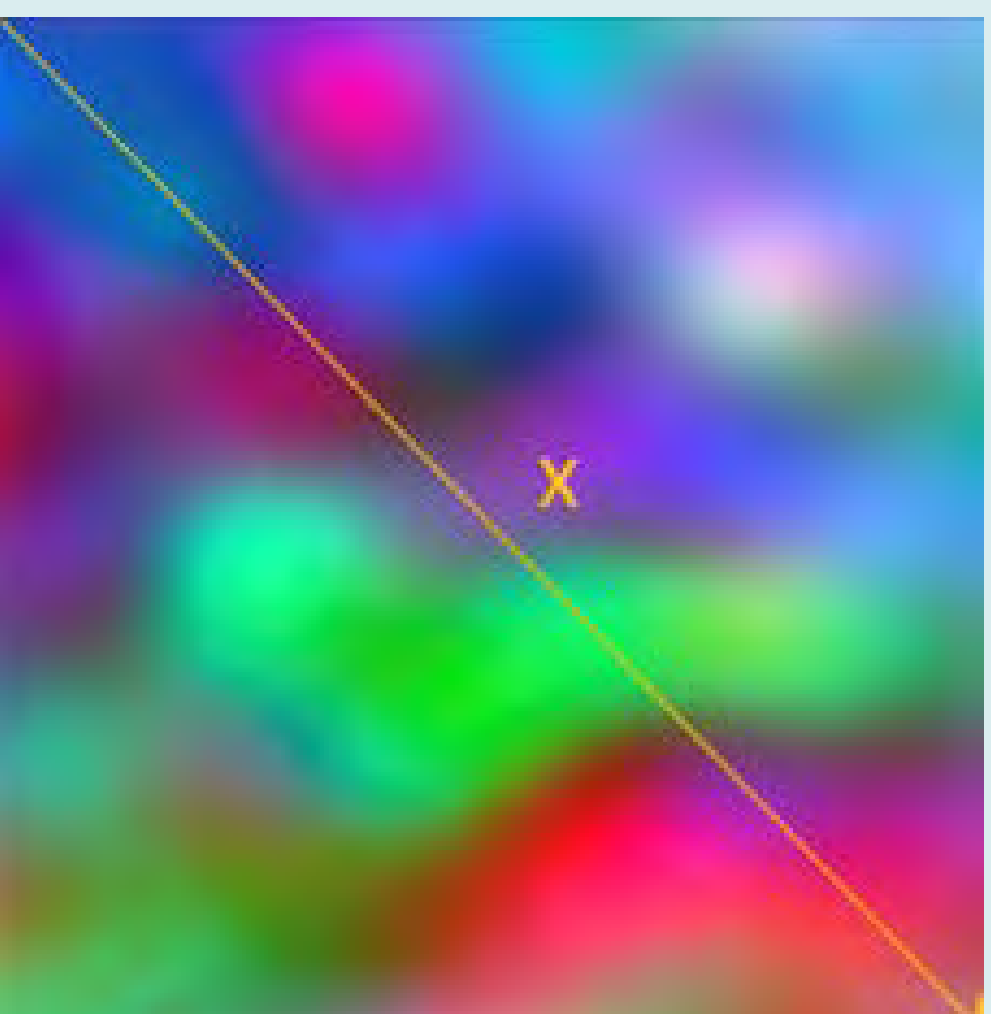

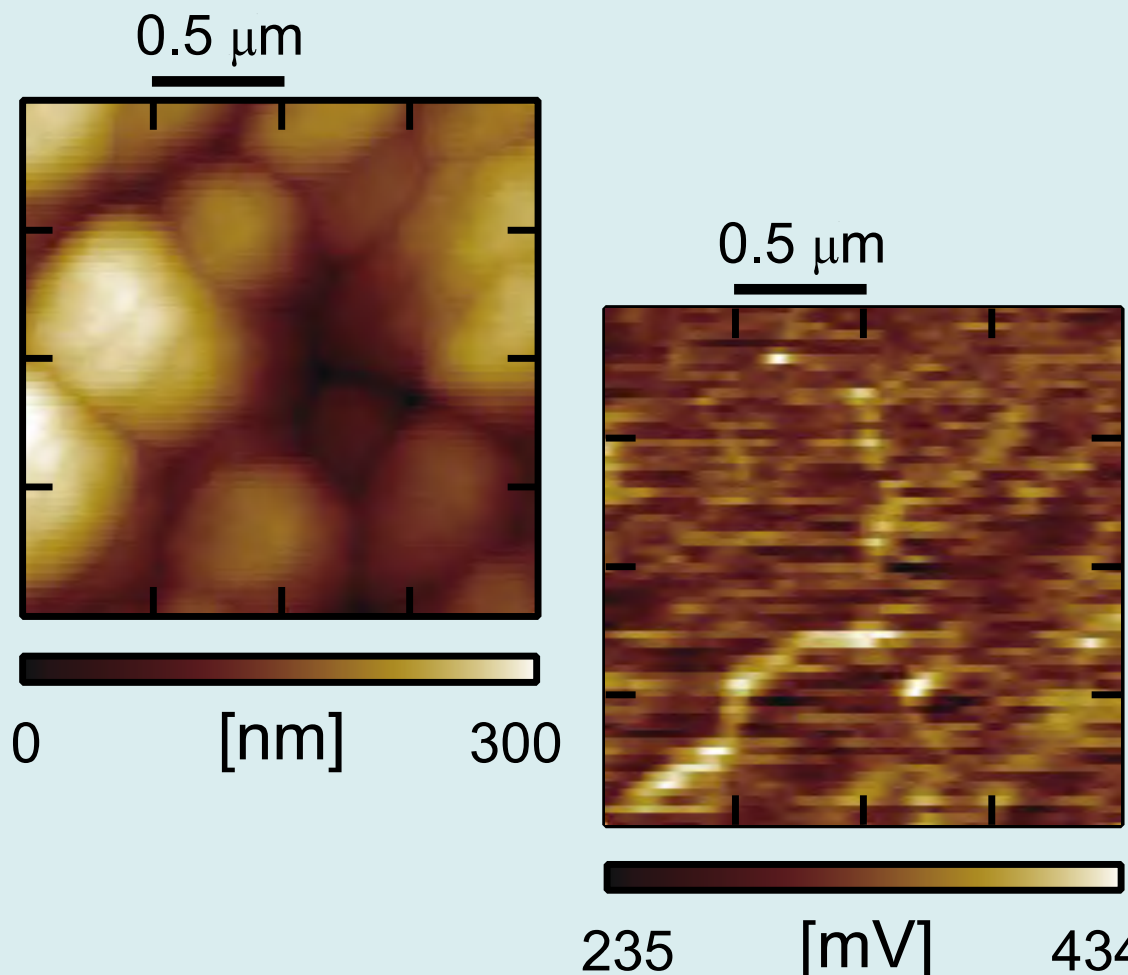

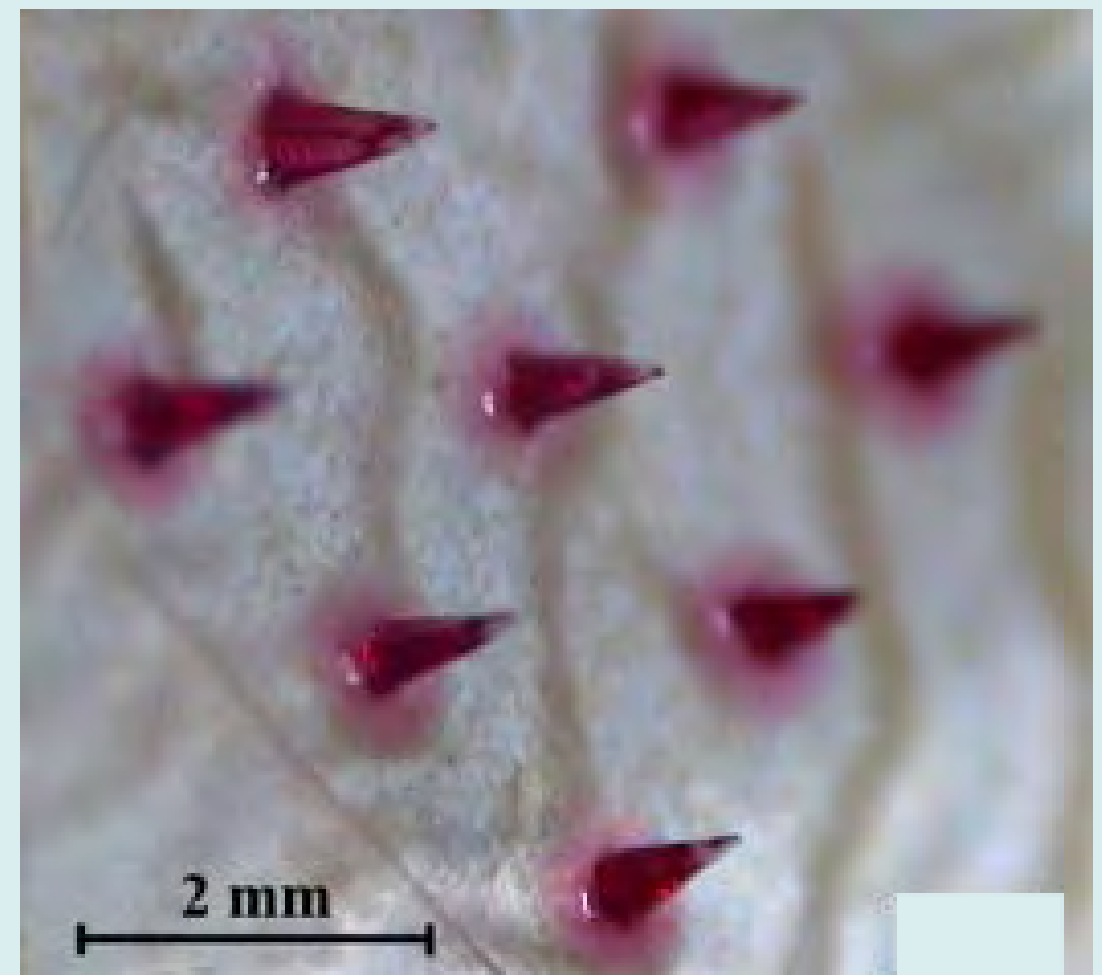

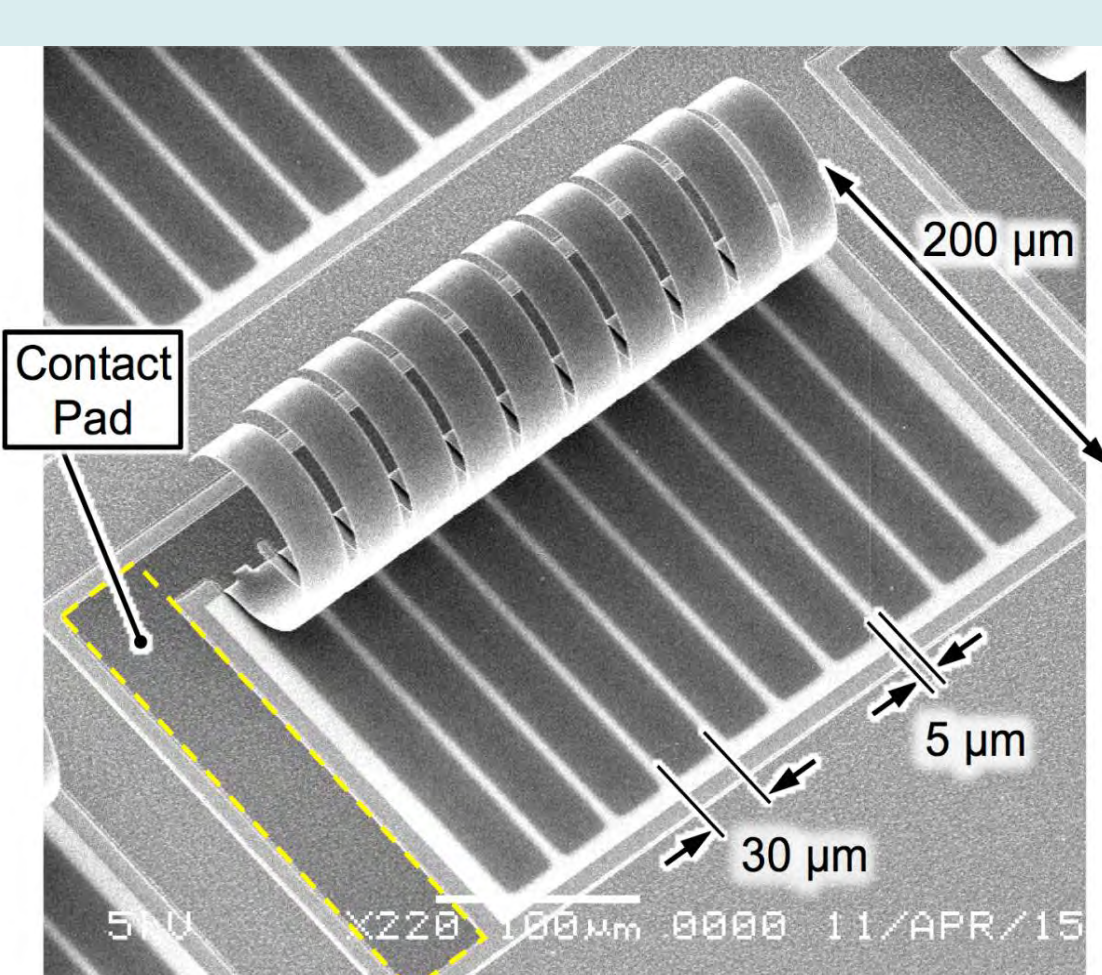

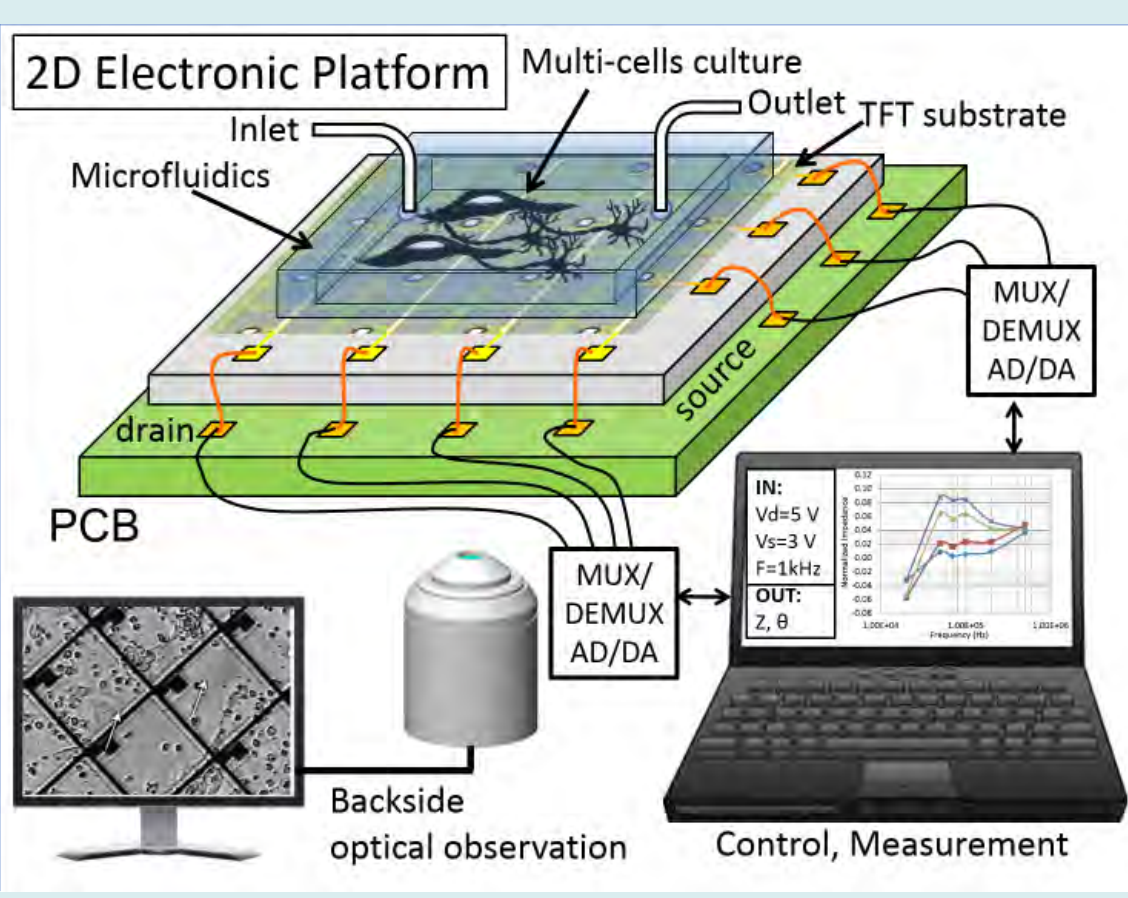



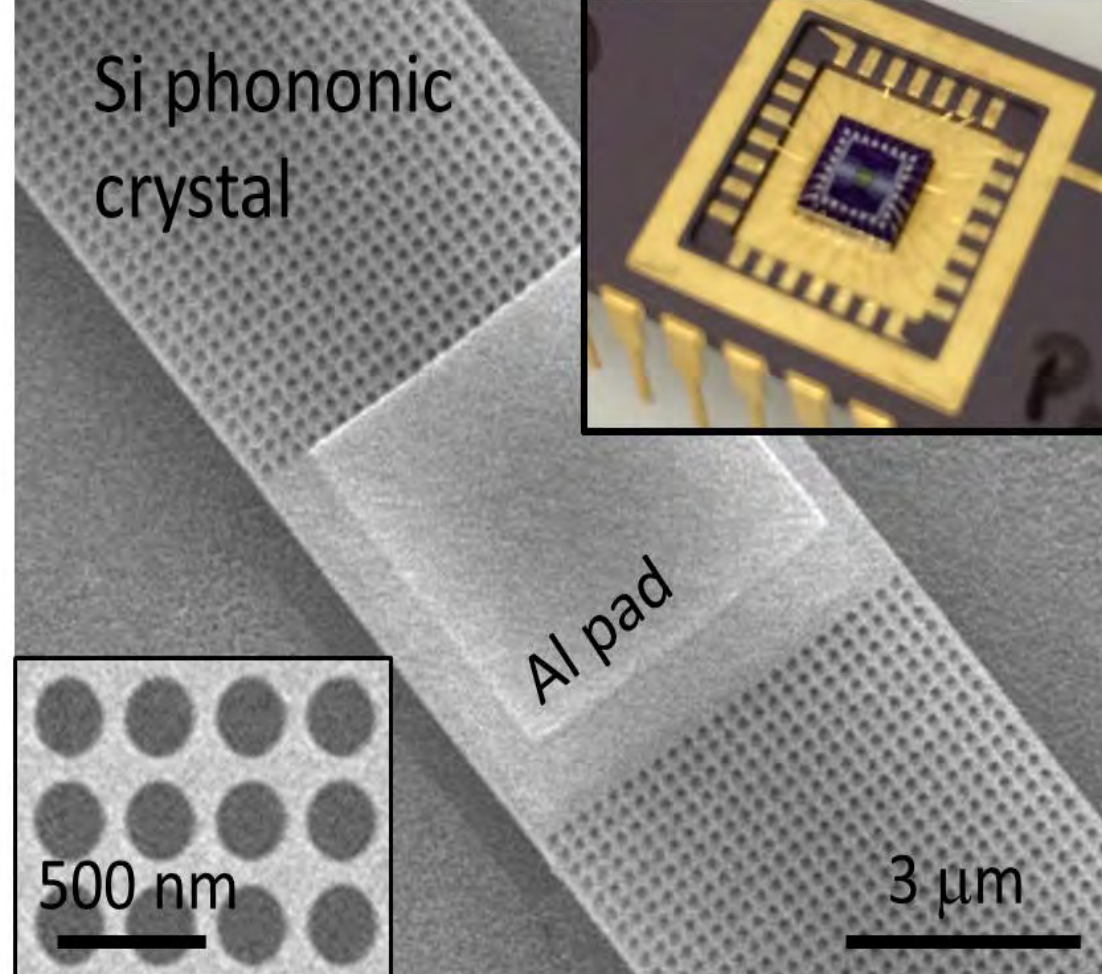

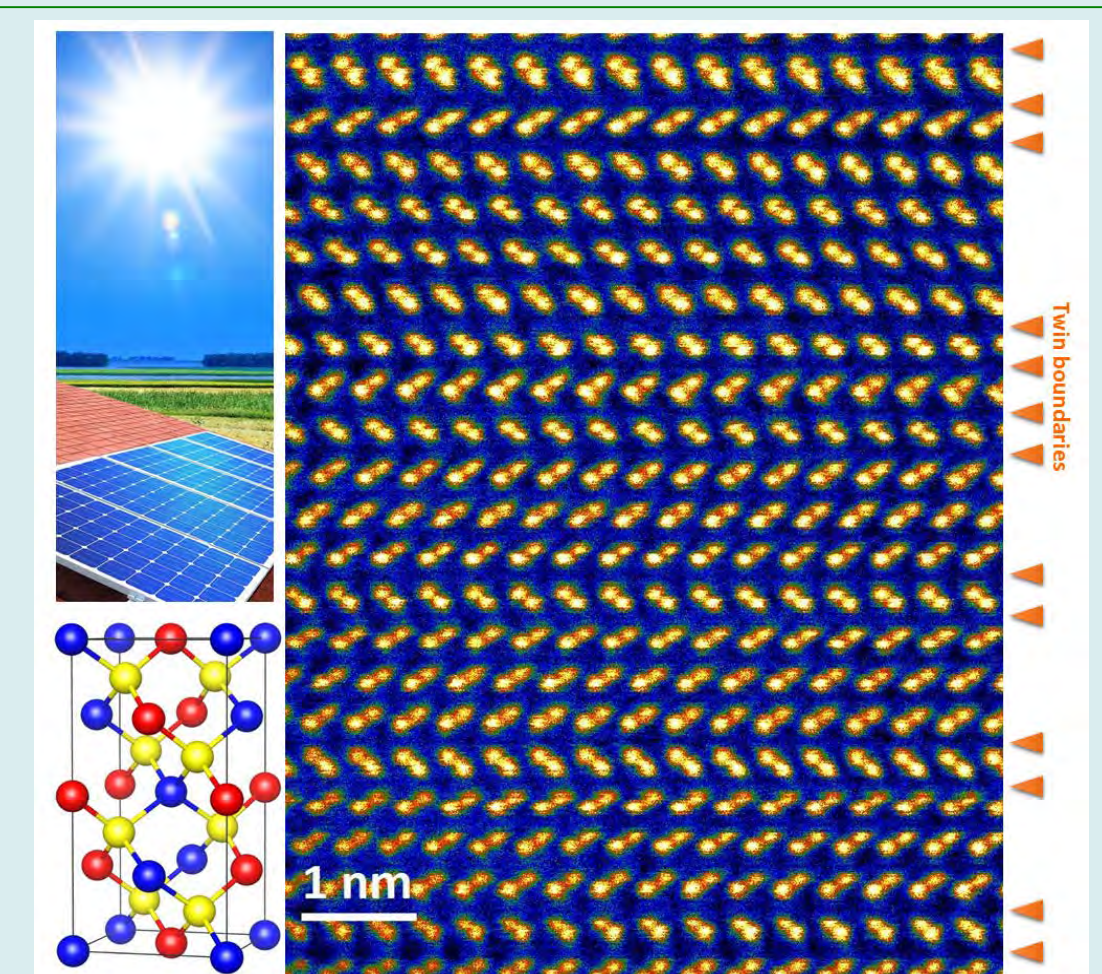
<http://www.cirmm.iis.u-tokyo.ac.jp/>

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



### CPS Implementation and gateway to cloud of big data

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.

<p><b>Kawakatsu Lab.</b> Dept.2 Ce-B02</p>  <p>Coupling to the nano regime</p>  <p>Image of silicon acquired with the Colour AFM</p>	<p><b>Takahashi Lab.</b> Dept.3 Ee-305</p>  <p>Nano-probing Technologies</p>  <p>Images of topography (left) and photovoltage (right) on Cu(In,Ga)Se<sub>2</sub> solar cell</p>	<p><b>Kim Lab.</b> Dept.2 De-B02 Dw-304</p>  <p>Micro Components &amp; Systems</p>  <p>Dissoluble microneedles of Carboxymethylcellulose with red dye for transdermal drug delivery</p>	<p><b>Toshiyoshi Lab.</b> Dept.3/ RCAST Ee-302</p>  <p>Optical MEMS&amp;RF-MEMS</p>  <p>MEMS electrostatic shutter array for daylight control window</p>
<p><b>Tixier-Mita Lab.</b> Dept.3/ RCAST Ee-302</p>  <p>Bio CMOS/MEMS Platforms</p>  <p>Integrated 2D electronic platform for electrical interaction and manipulation of biological cells</p>	<p><b>Takamiya Lab.</b> Dept.3/ VDEC Ew-206</p>  <p>Integrated Power Management</p>  <p>Millimeter-scale LED based on acoustic levitation for mid-air display</p>	<p><b>Nomura Lab.</b> Dept.3 Fe-207</p>  <p>Nanoscale heat transfer and thermoelectrics</p>  <p>Nanostructured Si thermoelectric energy harvester</p>	<p><b>Mizoguchi Lab. affiliated member</b> Dept.4 Fe-312</p>  <p>Understanding role of atom and electron in material</p>  <p>Atomic resolution image of multiple-twin boundary in photovoltaic cell material</p>

