

BJ KIM LAB.

[Micro Components & Systems]

Centre for Interdisciplinary Research on Micro-Nano Methods

NEMS, Bio-MEMS, Biomolecular Needling Systems

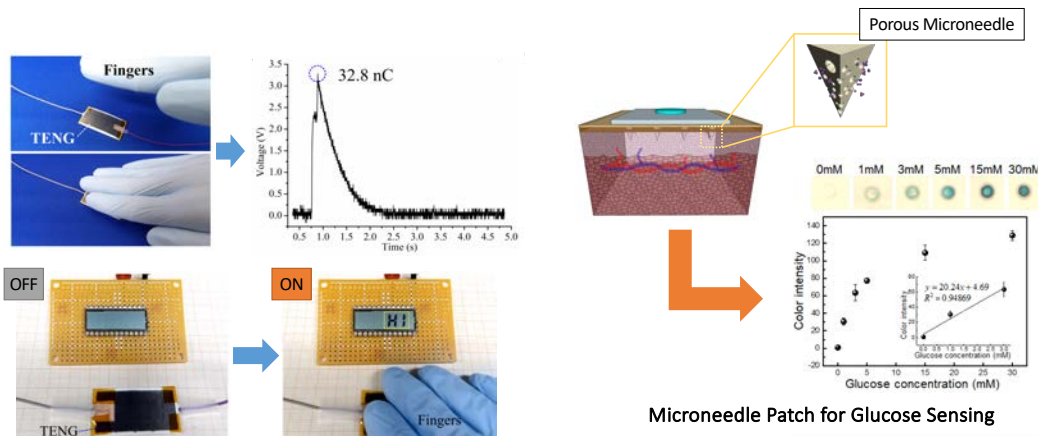
Precision Engineering Department

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

Microneedles—Revolution of Drug Delivery System

Our research goals are to build smart nanosystems and integrate nanoscale components in micro sensors, in particular for environment/bio-sensing, through both bottom-up and top-down approaches. Based on these studies on nano/micro components for the fabrication of novel nano devices, we investigate to develop various micro sensors for biological applications, such as i) MEMS device for electrical/physical characterization of single cell, ii) Tribo-electric nano generator, energy harvesting MEMS components for wearable sensors, etc.

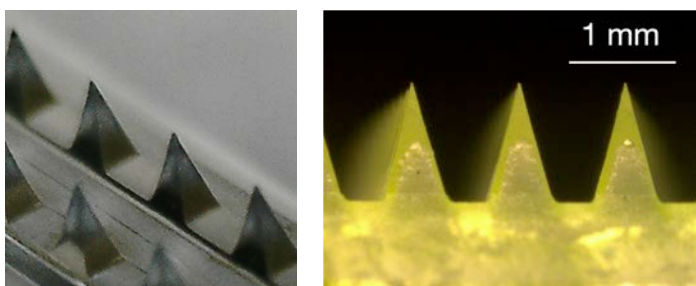
On the other hands, We investigate a novel fabrication method to achieve the user-friendliest, low-cost, and safest way for dissolvable micro needles patch with vaccine delivery. The micro needle mediated drug delivery system has been developed to provide painless self-administration of biological drug with patient friendly manner. Especially, dissolving micro needles, which deliver the target drugs as the drug-loaded micro needle dissolves into the skin, have been spotlighted recently.



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Micro needle Patch
for Beauty and Health?



Triboelectric Power Device on a Paper



Bio-dissoluble Microneedle Patch for DDS and Sensing

