

# BJ. KIM LAB.

## Biomolecular Needling Systems



Center for Research on Engineering in Medicine and Biology (CREMeB)  
Laboratories for International Research on Multi-disciplinary Micro Systems

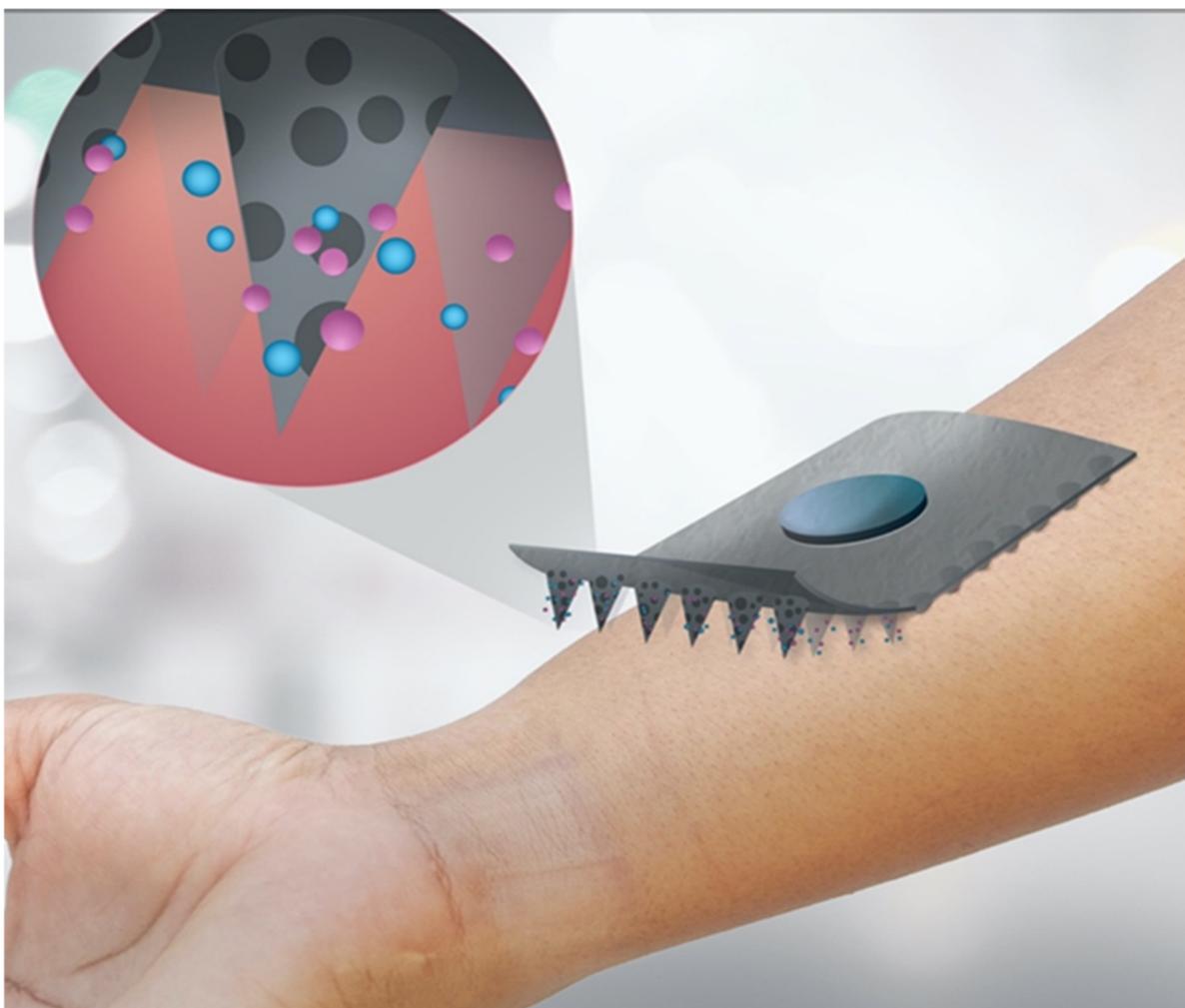
Micro Components & Systems  
Department of Precision Engineering, Graduate School of Engineering

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

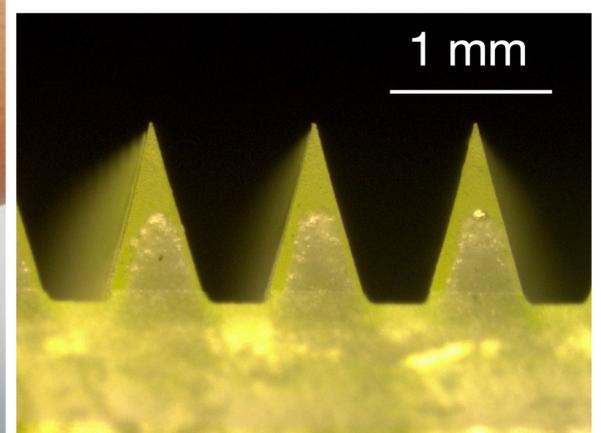
## Microneedles—Revolution of Drug Delivery System

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, 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 dissoluble 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.



Please, **Click QR code !!**  
*Micro needle Patch*  
for Beauty and Health?



Bio-dissoluble Microneedle Patch for DDS and Sensing