

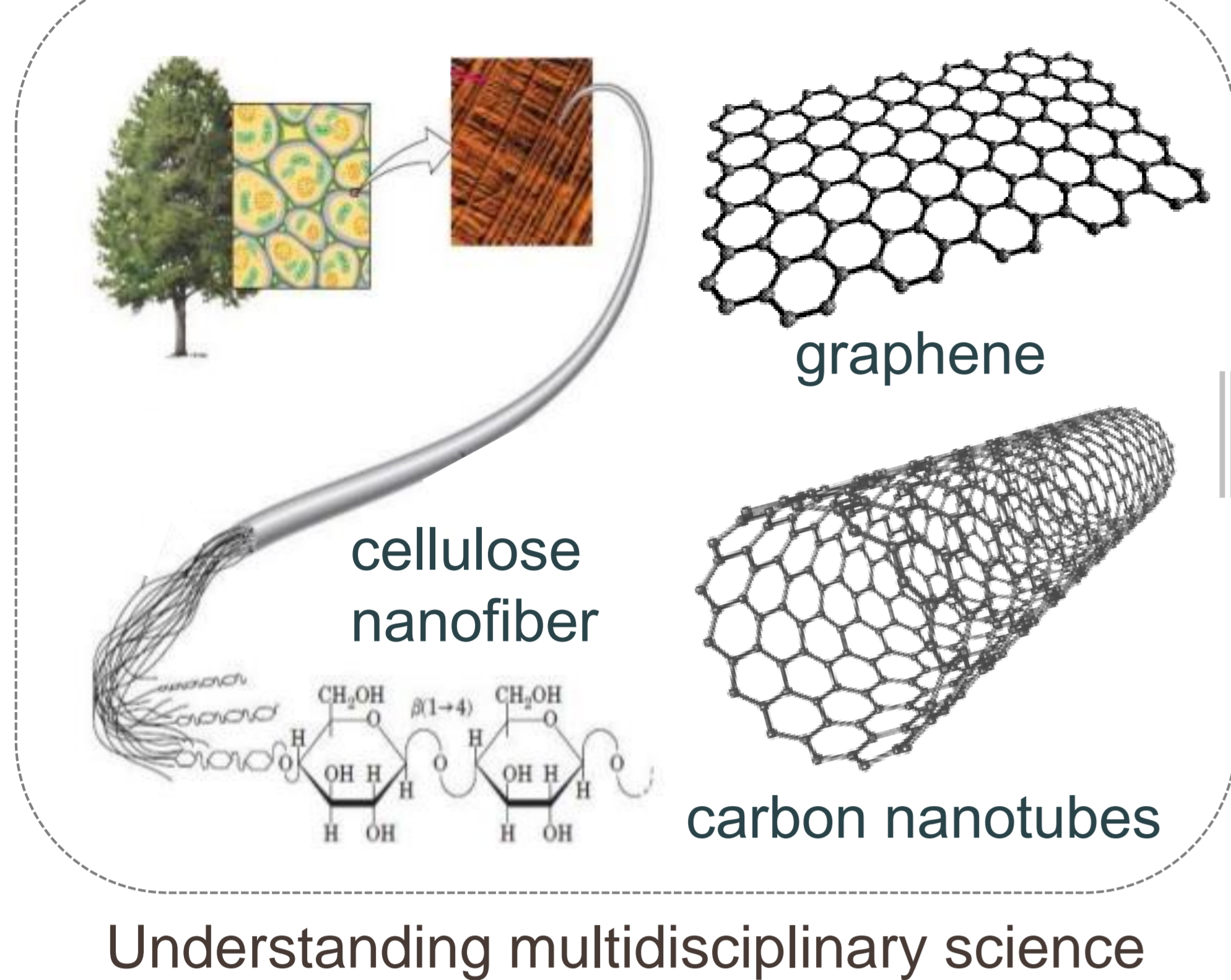


Nanomaterials, Processing and Their Applications

Advanced Power System Laboratory (APSL)
Mechanical Engineering, Incheon National University

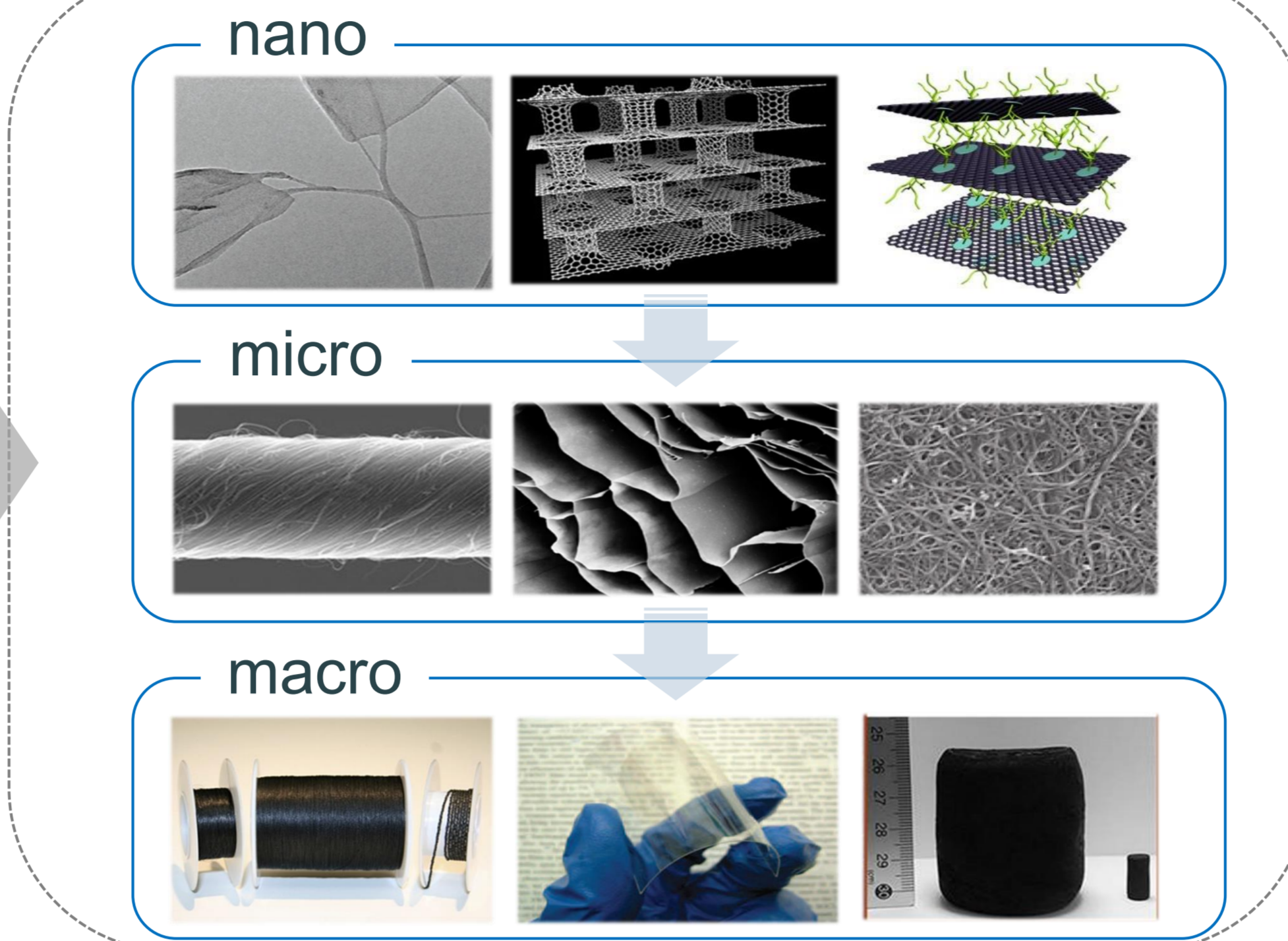
Research theme

Nanomaterials



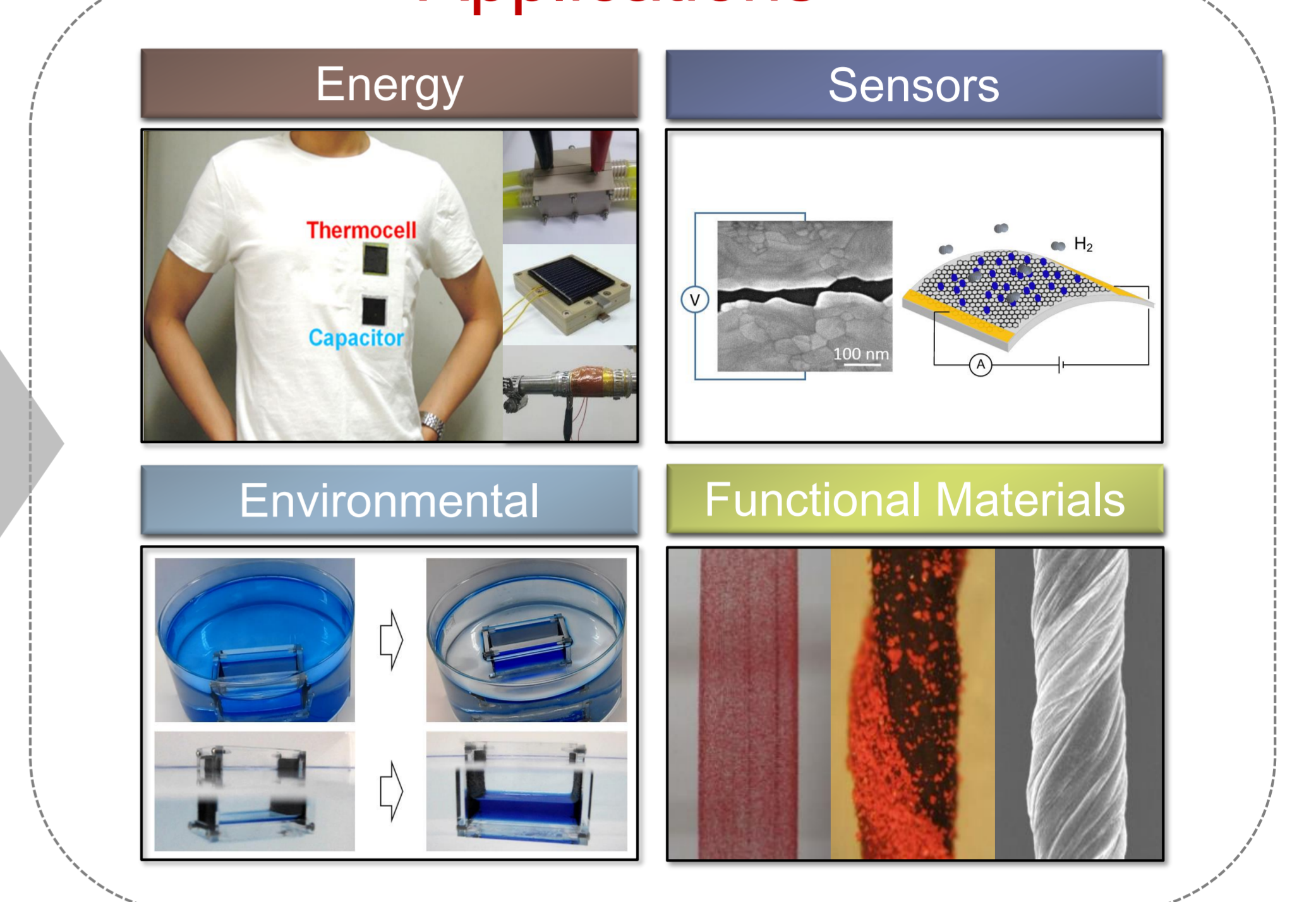
Understanding multidisciplinary science

Processing



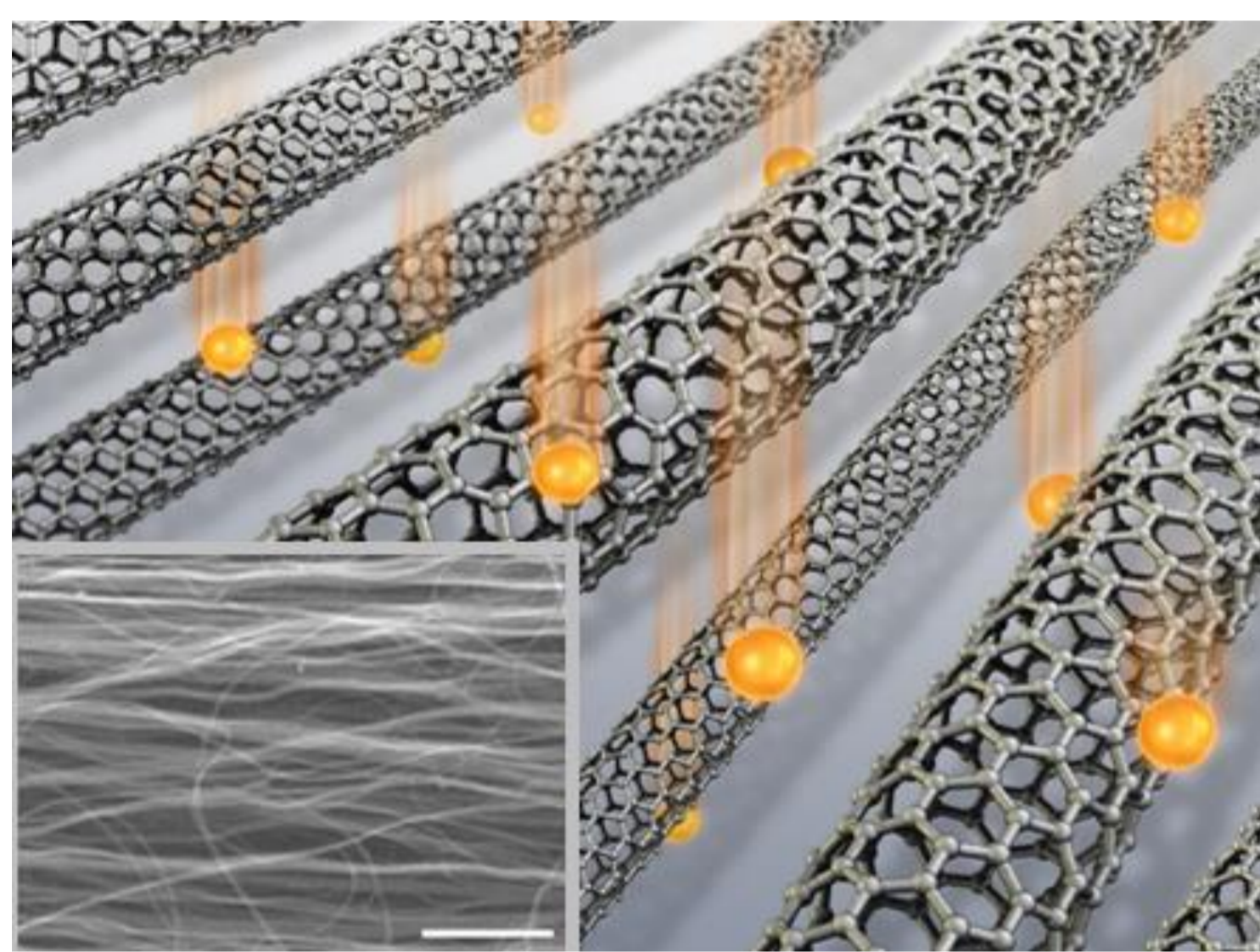
Multiscale design and manufacturing

Applications

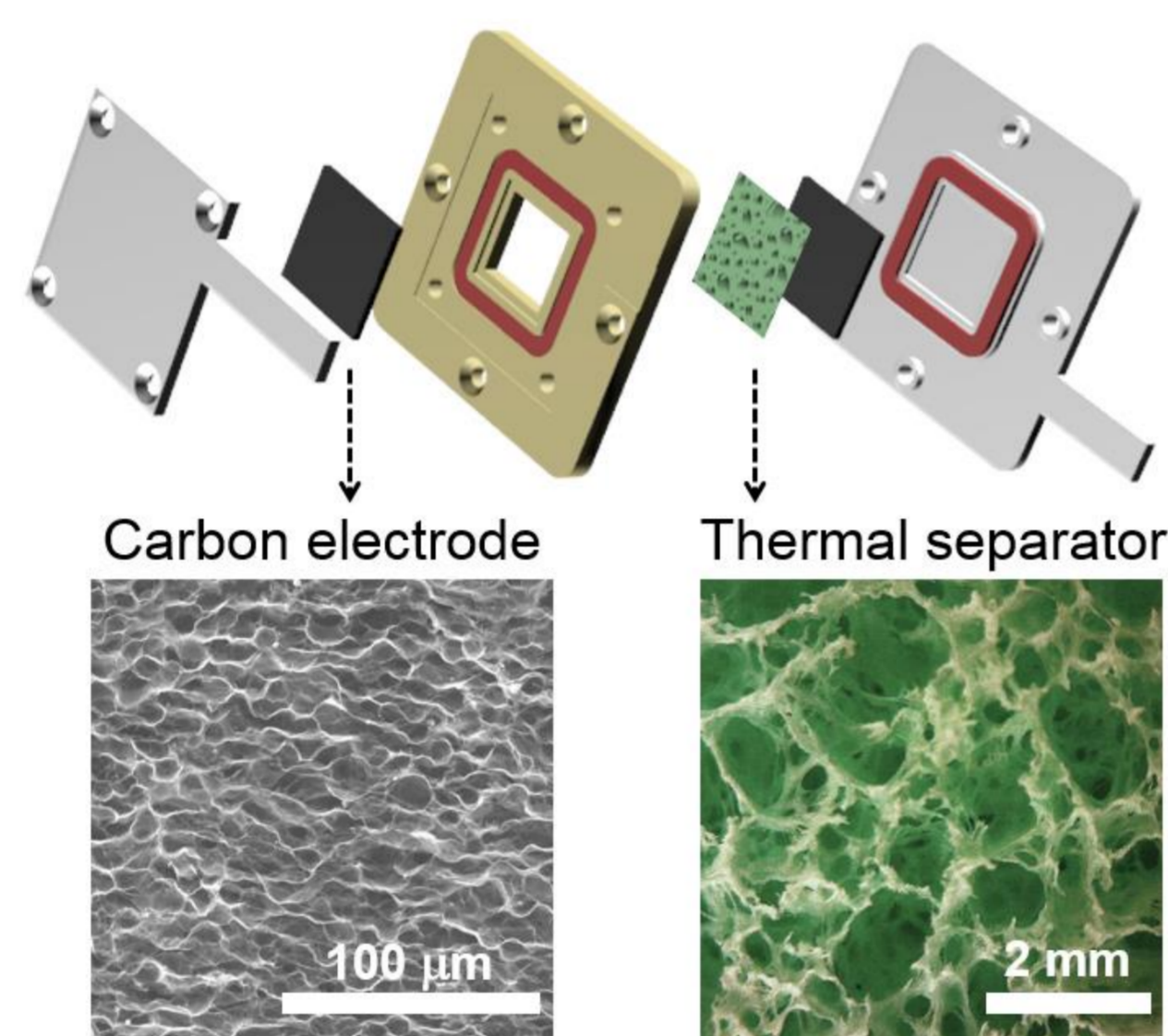


High impact applications

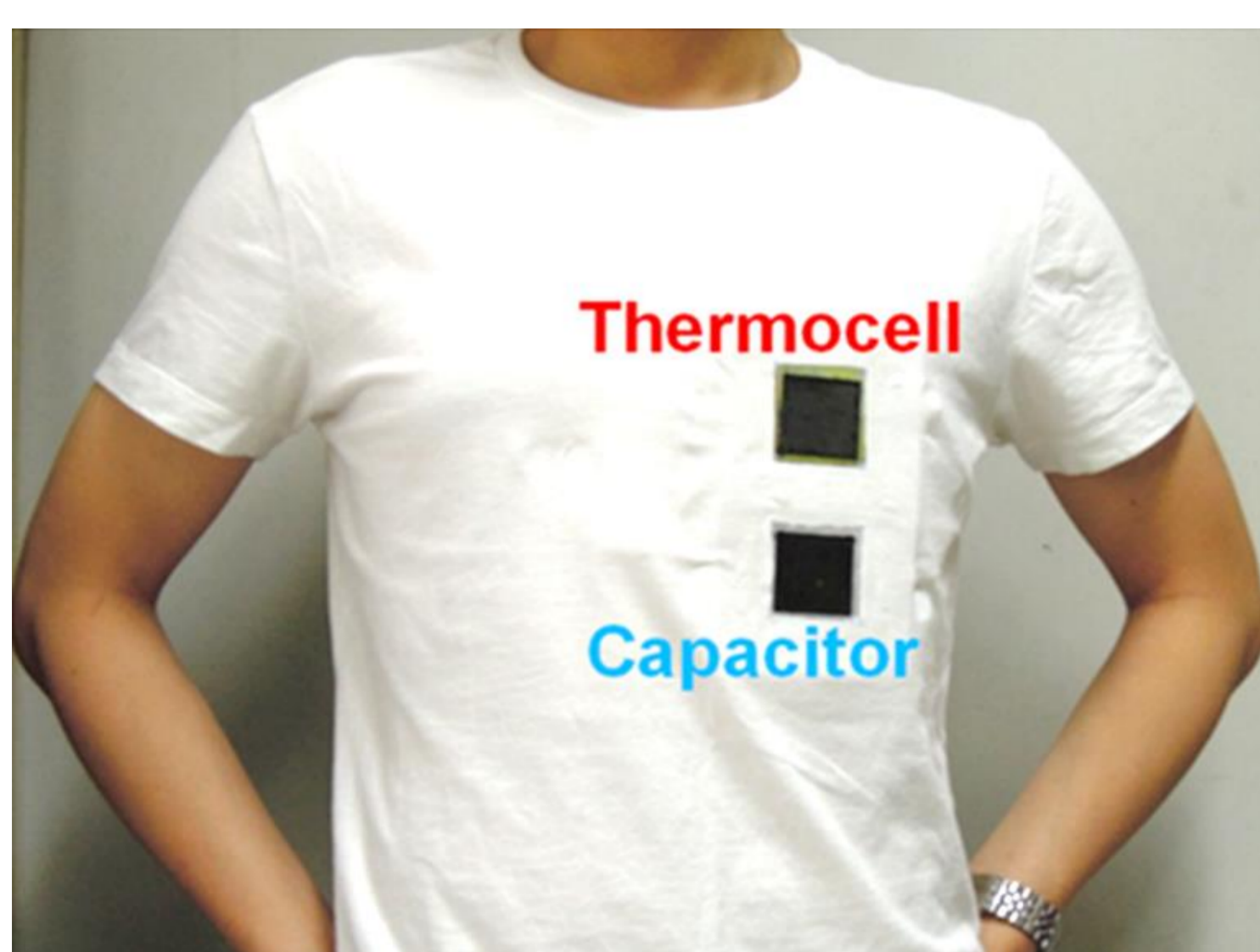
Energy & Environmental



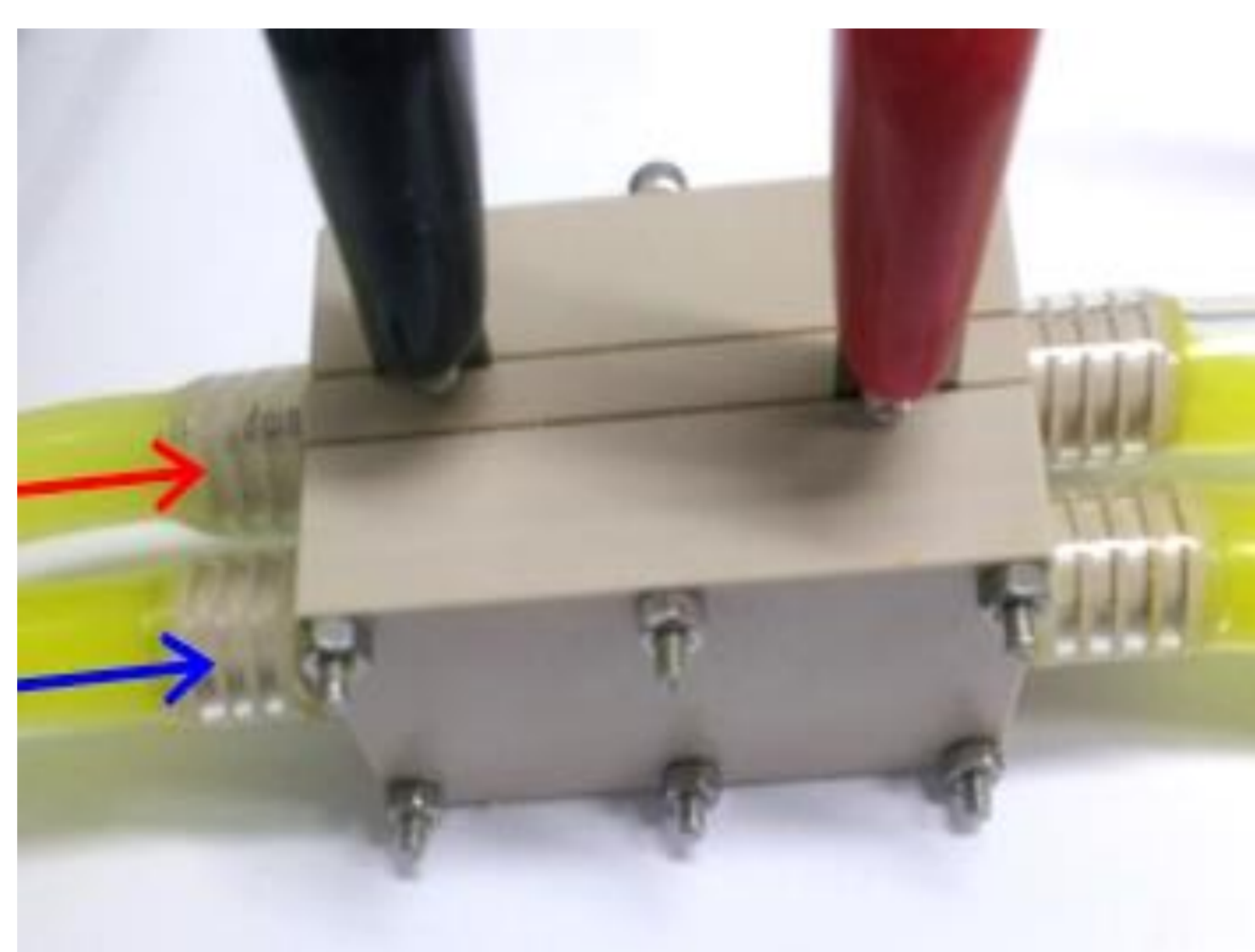
Thermal battery, Nature Comm. 2016



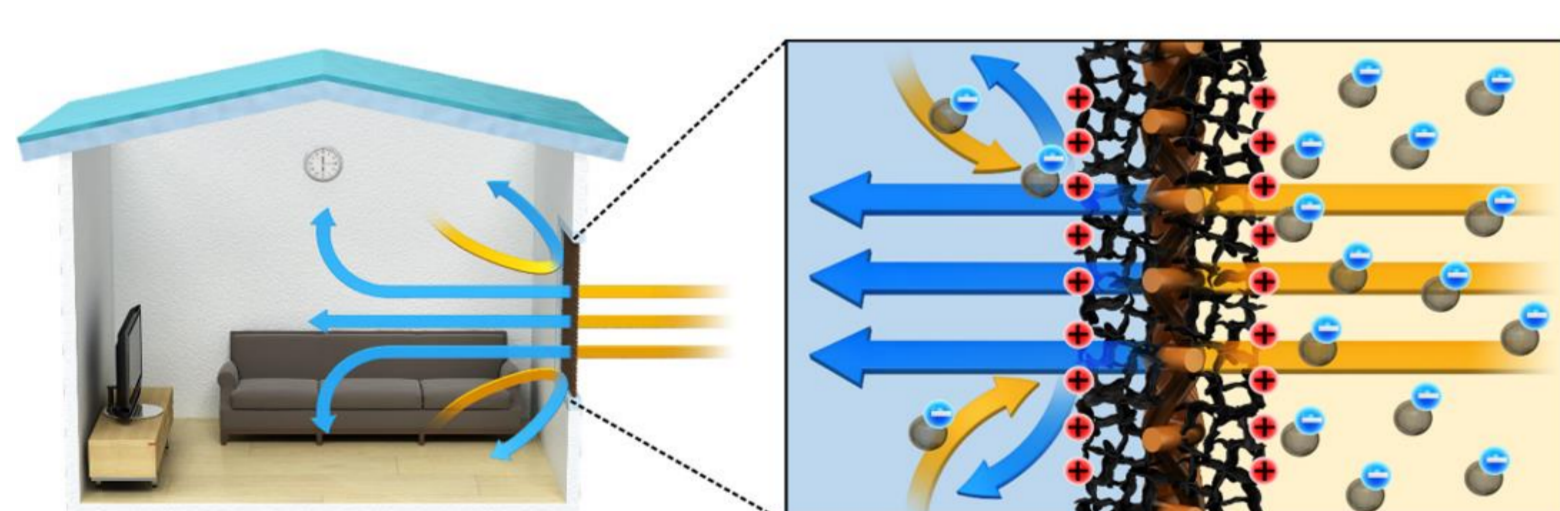
High power thermocell, Adv. Mater. 2017



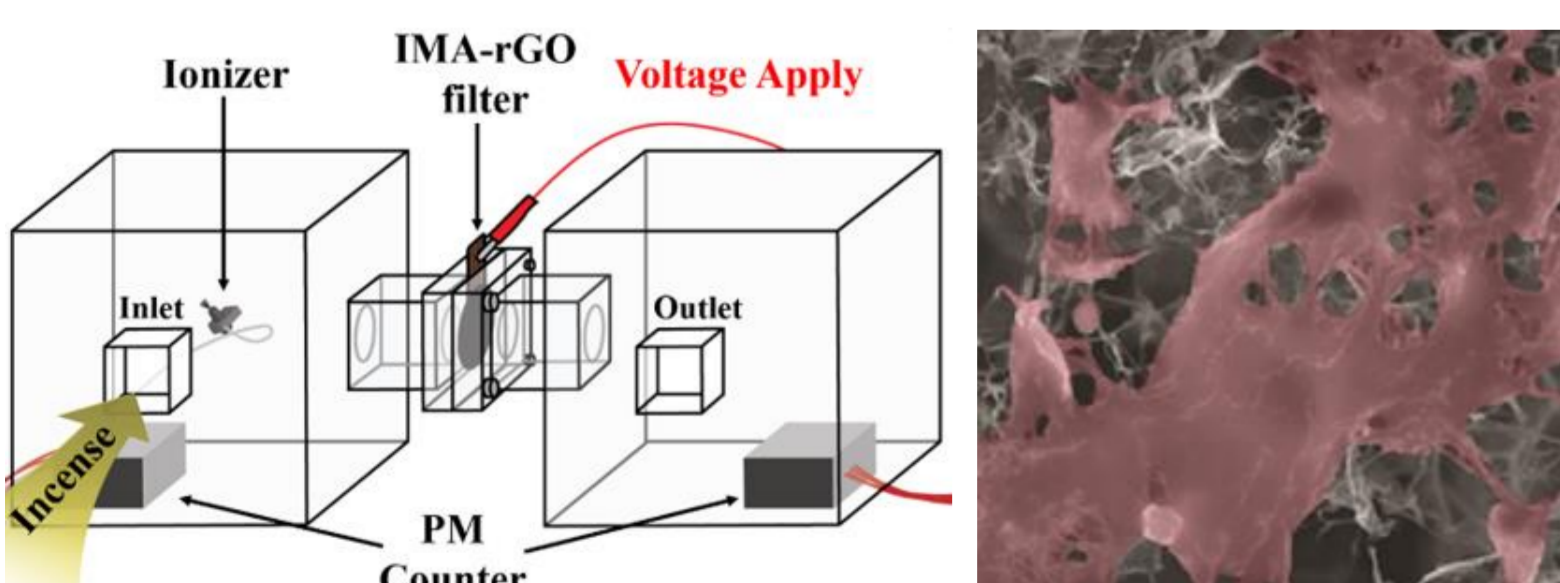
Wearable thermocell, Nano Res. 2014



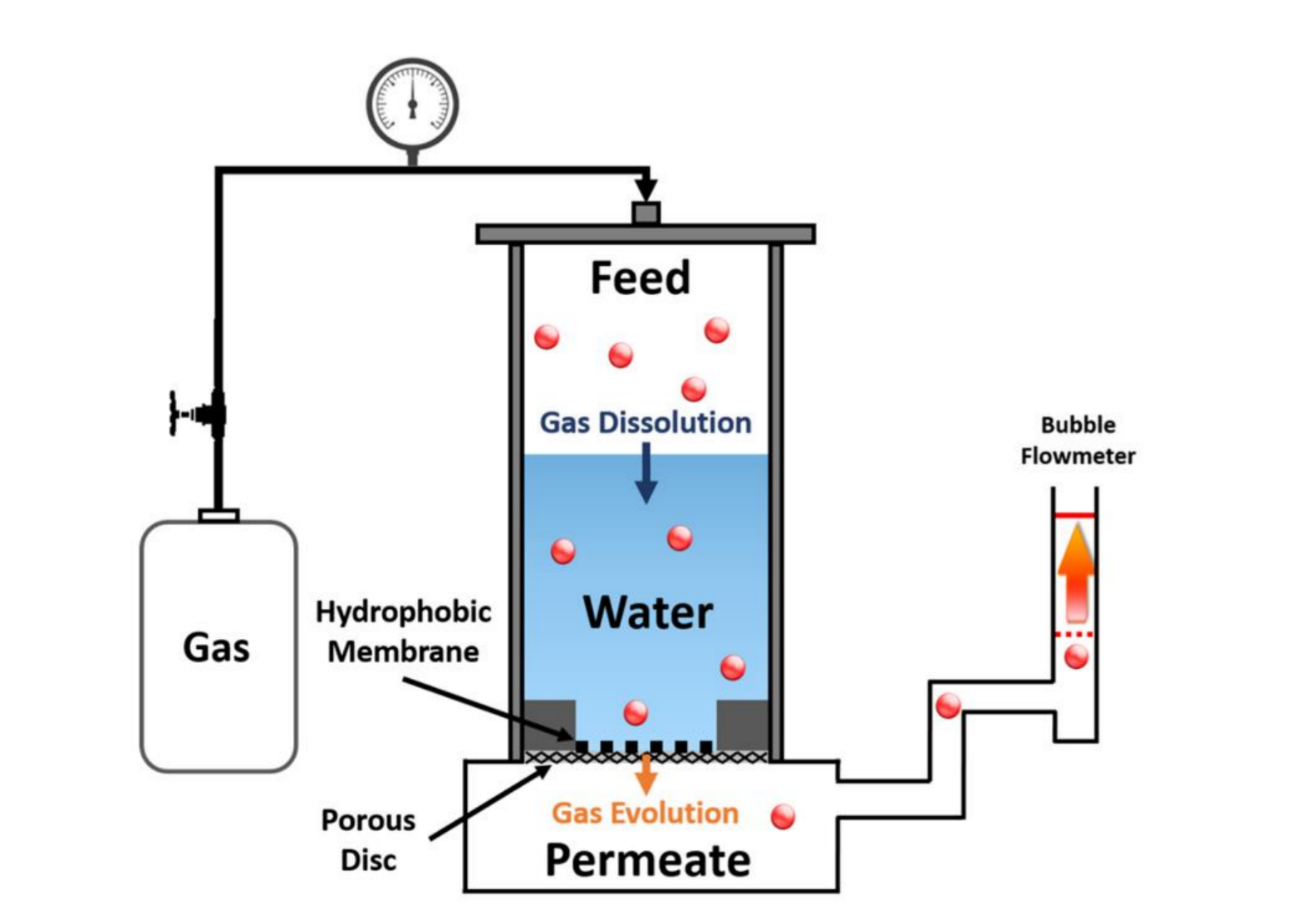
Thermal flow cell, Nano Energy 2017



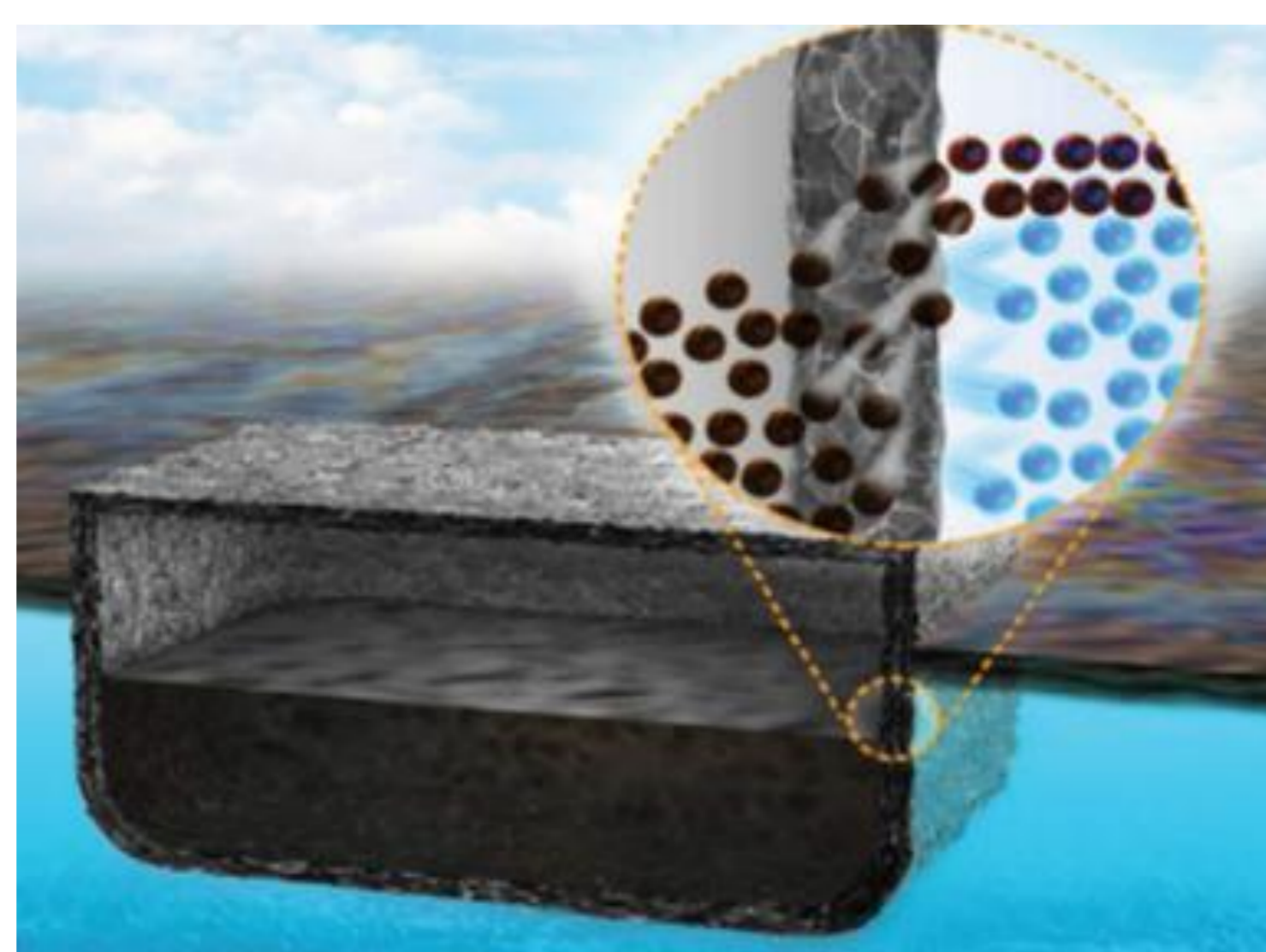
PM_{2.5} filter, J. Mater. Chem. A 2018



Heat sink, J. Mater. Chem. C 2016

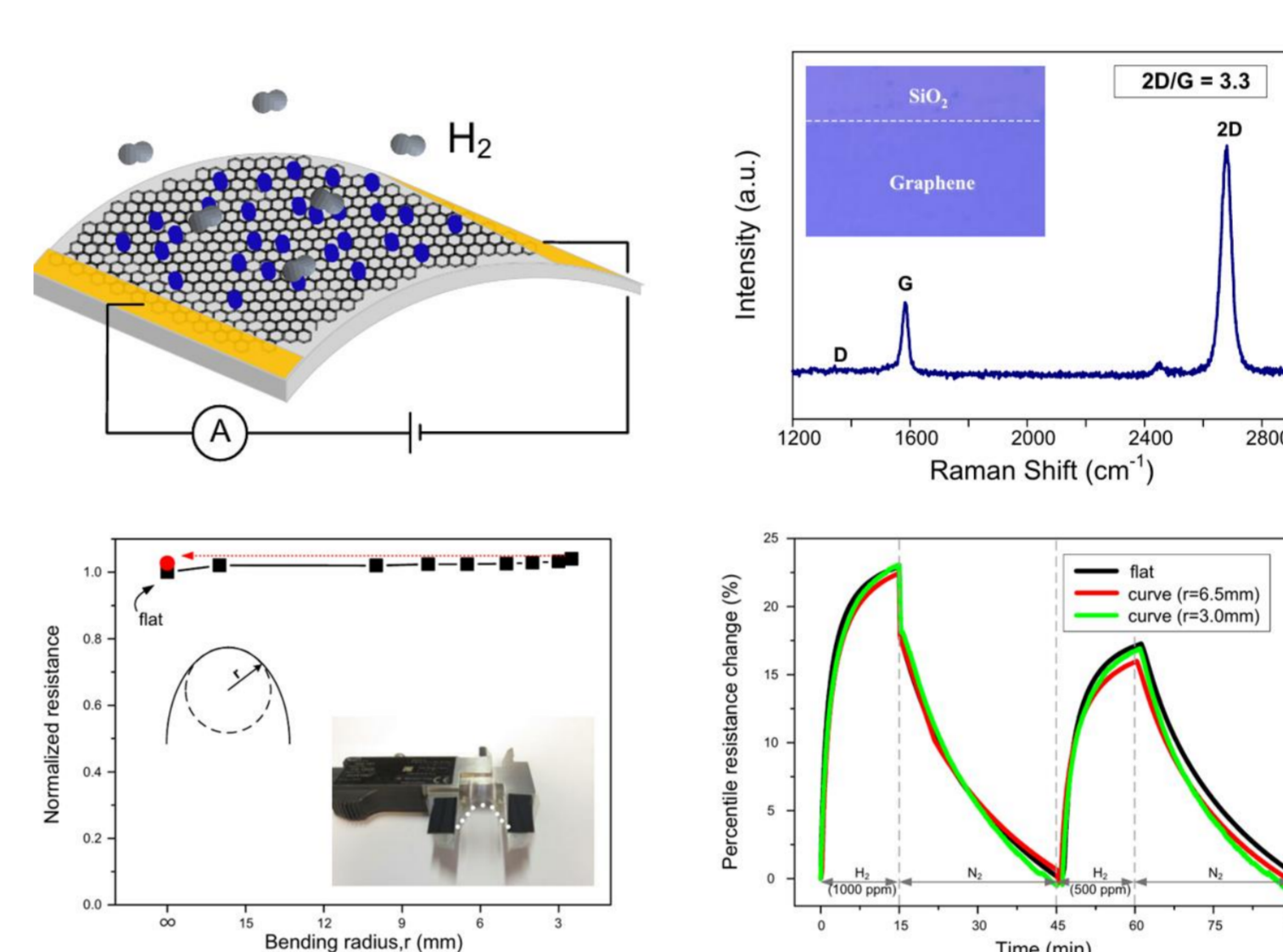


CO₂ separation, Sep. Purif. Technol. 2018

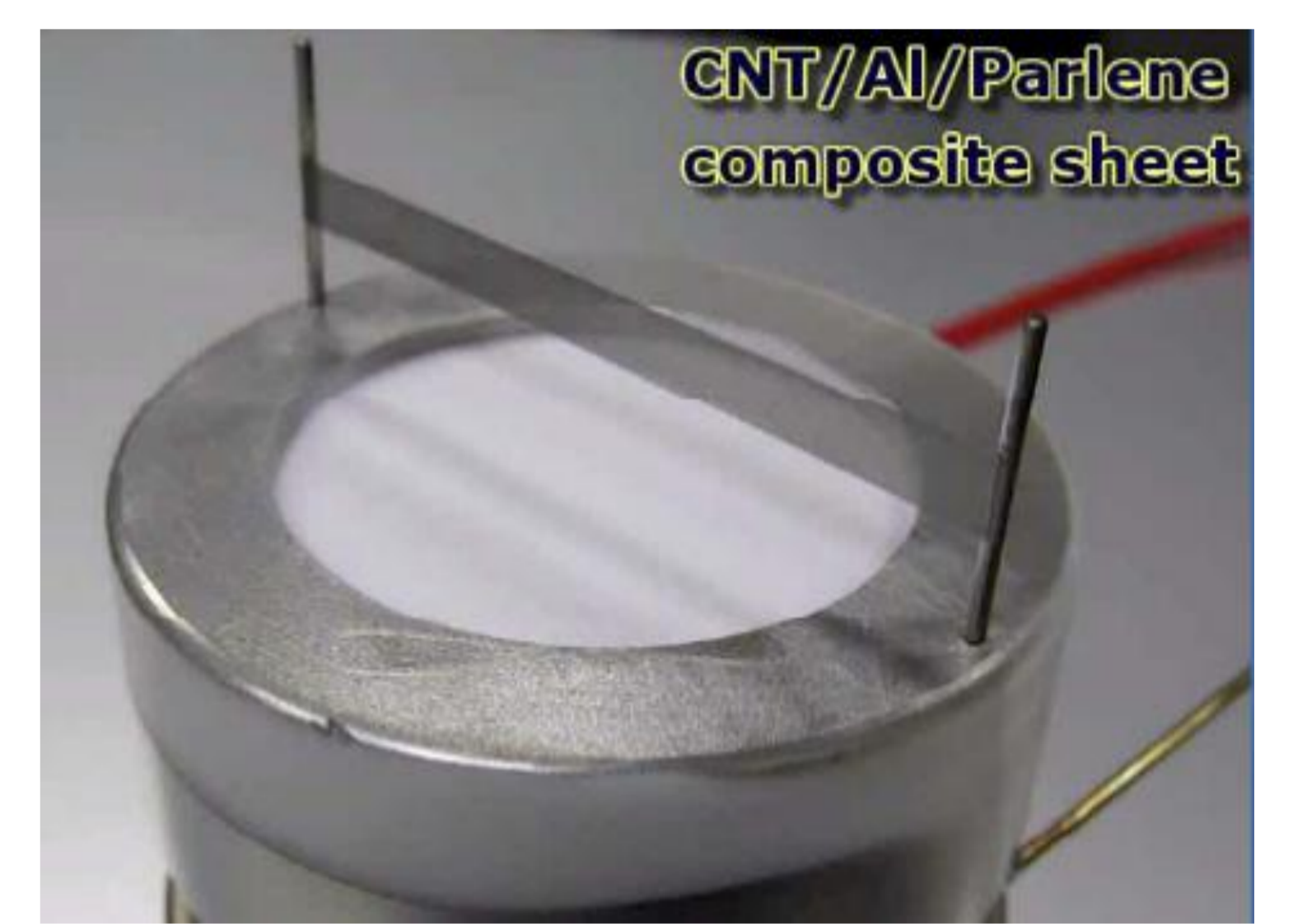


Spilled oil recovery, Sci. Rep. 2016

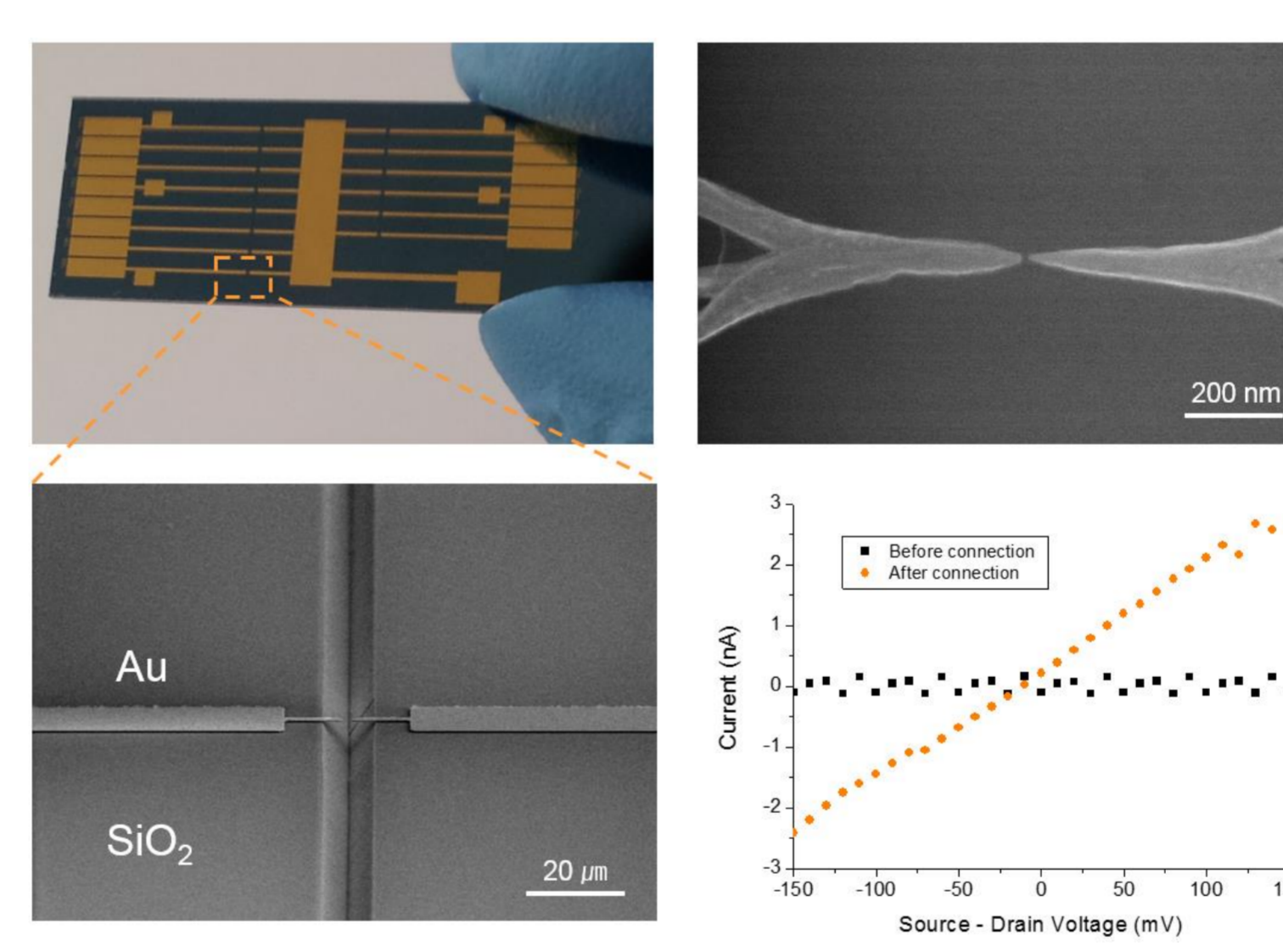
Sensors



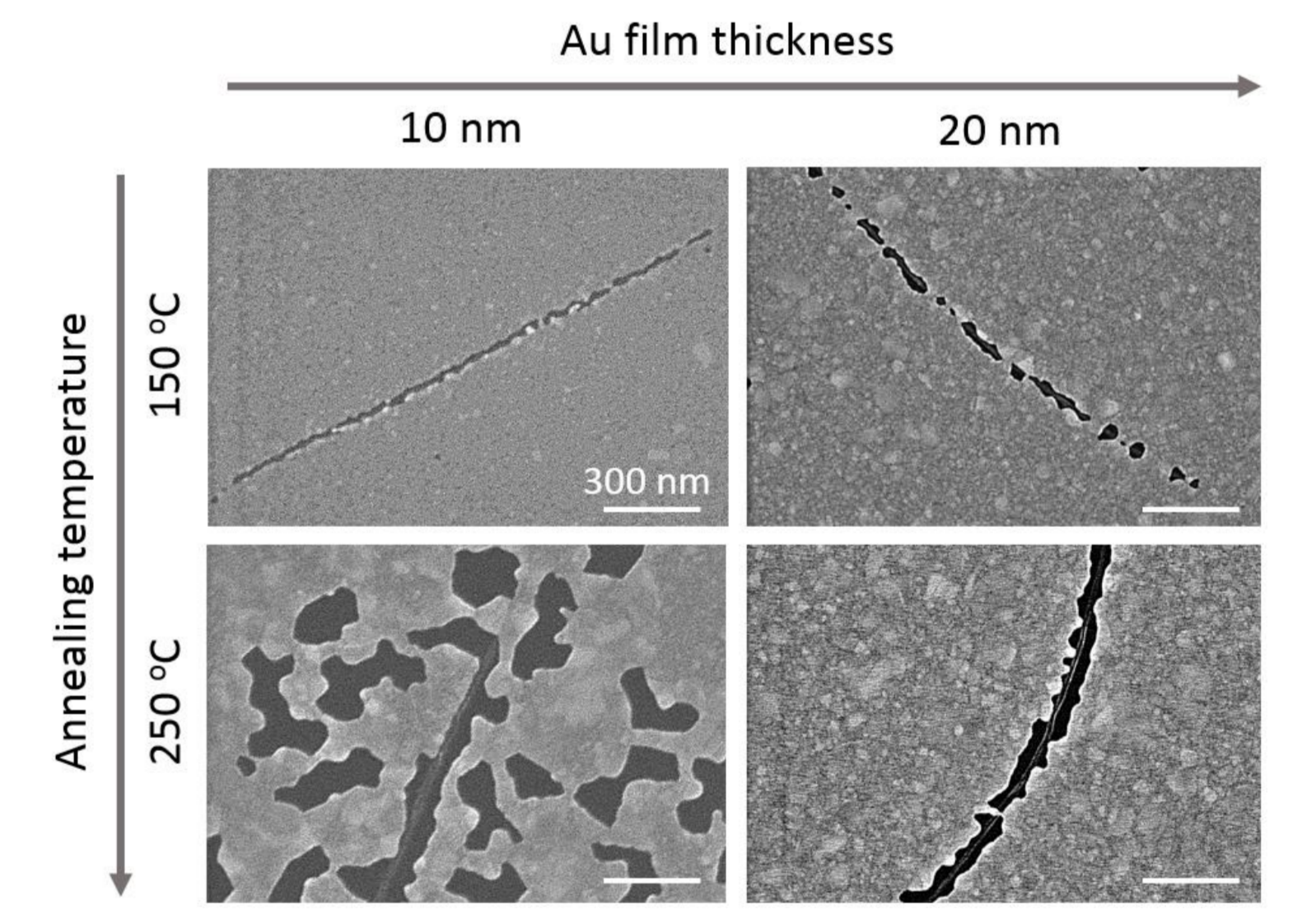
Hydrogen gas sensor, S&A-B 2012



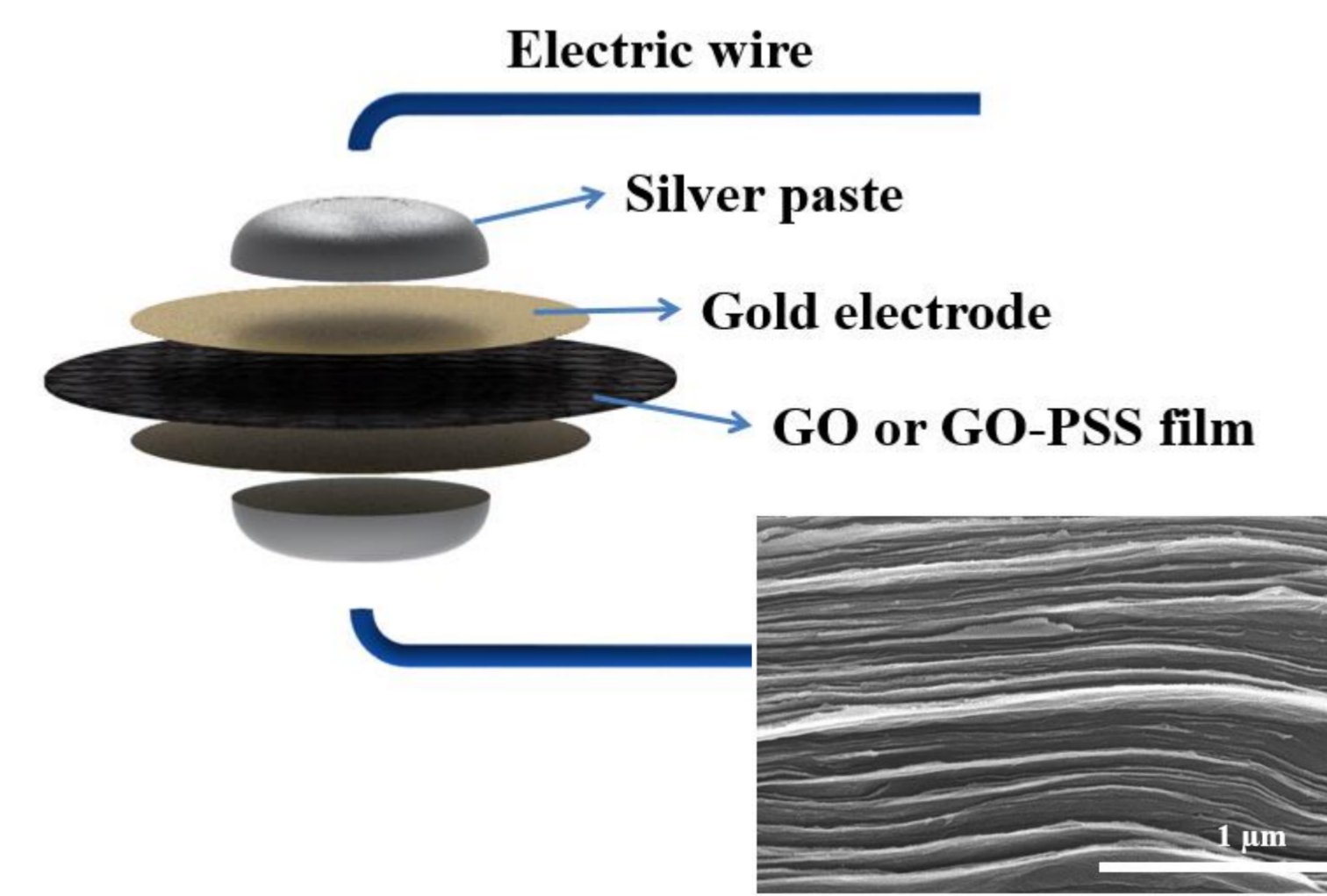
Infrasound detection, Sci. Rep. 2014



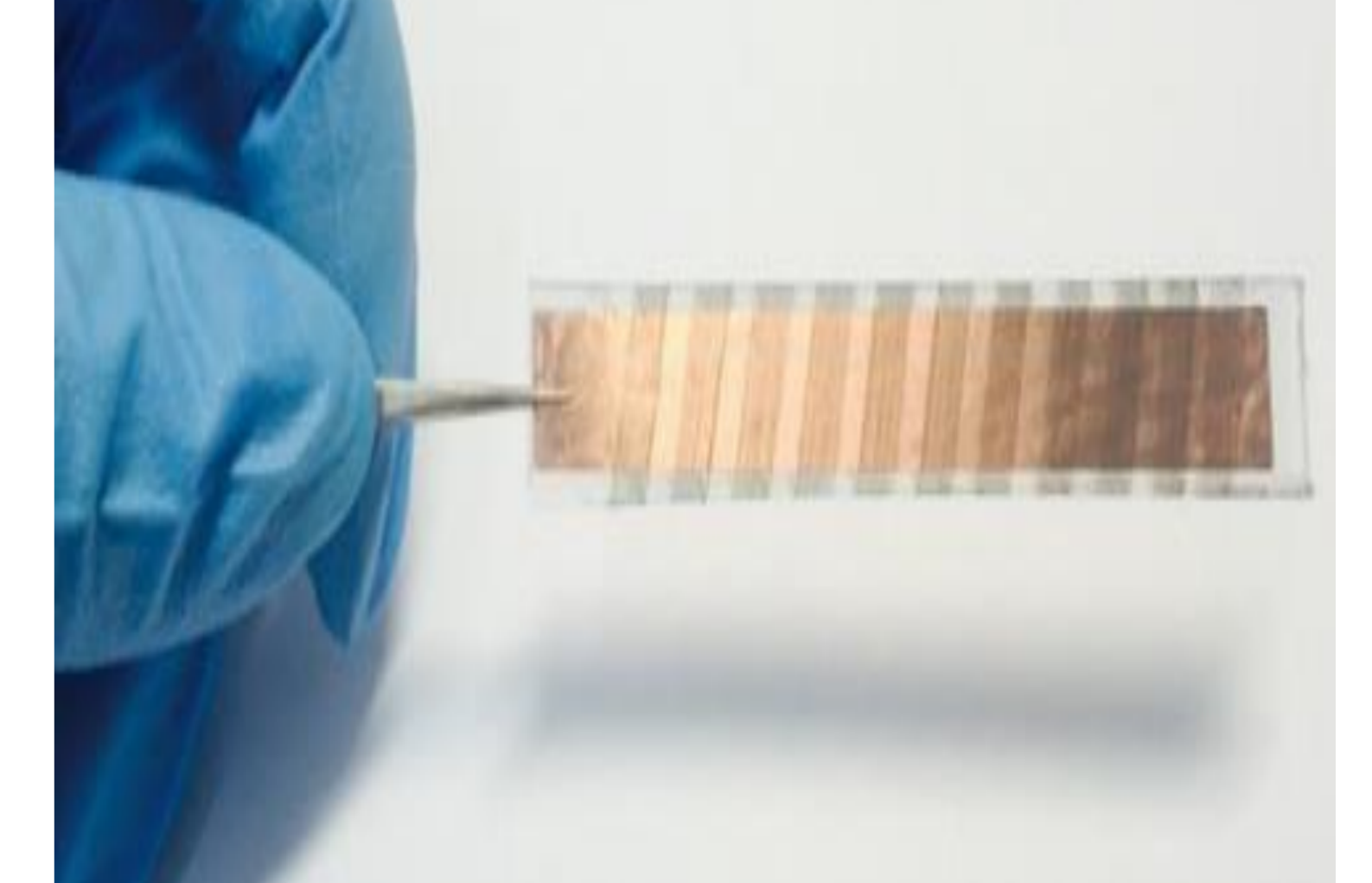
Nanosize gap, S&A-B 2012



Nanogap electrode, JMC-C 2016



Humidity Sensor, ACS AMI 2014

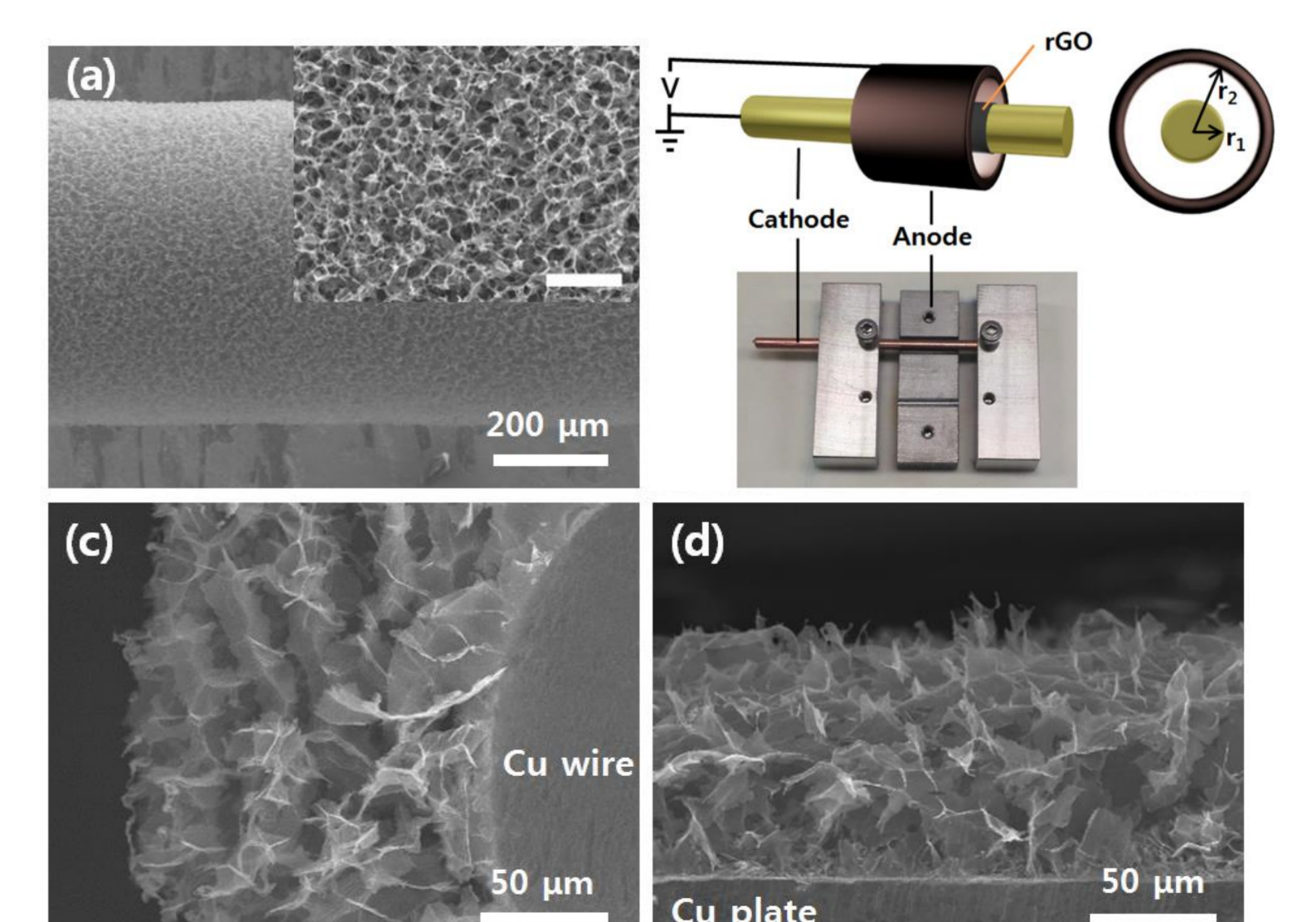


Coulombic dragging, Nanoscale 2016

Functional Materials



Optical haze films, Carbon 2016



Graphene foam emitter, Carbon 2016