THz nanoscopy and metal-polymer hybrid

KAJIHARA LAB.

[THz Nanoscopy and Metal-Polymer Joining]

Department of Mechanical and Biofunctional Systems

Manufacturing Science Fundamentals

Department of Precision Engineering

Terahertz (THz) nanoscopy

http://www.snom.iis.u-tokyo.ac.jp



We directly probe spontaneously emitted THz waves (wavelength: $10 \sim 20 \mu m$) with 20 nm-spatial resolution derived from (bio-)molecular motions and lattice vibrations. \Rightarrow nano-thermometry, energy dissipation on nano-IC, biomolecular motions, etc.







Fig. 3 Nano-thermometry

Metal-polymer direct joining

Small textures treated on metal surface enable direct joining to plastics. We are optimizing the joining conditions and analyzing the joining mechanism. ⇒ automobiles, mobile phones, fuel cells, electrodes on ICs, etc.





Fig. 5 Mold for joining and metal-polymer hybrid



