KAJIHARA LAB.

[THz Nanoscopy and Metal-Polymer Joining]

Department of Mechanical and Biofunctional Systems

Manufacturing Science Fundamentals

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Terahertz (THz) nanoscopy

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

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.