



### Showcasing work from the Laboratory of Prof. Naito at Ehime University, Japan

The universal relationship between sample dimensions and cooperative phenomena: effects of fractal dimension on the electronic properties of high- $T_c$  cuprate observed using electron spin resonance

It is known that low-dimensional materials exhibit qualitatively different physical properties from the bulk properties of the same materials. However, it has remained elusive how the dimensions of the sample structures correlate with cooperative properties in a universal and quantitative way. We have controlled the sample fractal dimensions in a continuous manner. Combining electron spin resonance for a superconductor and structural model calculations, universal structural instabilities at fractal dimensions have been discovered and explained.

### As featured in:



See Toshio Naito and Yoshiaki Fukuda, *Phys. Chem. Chem. Phys.*, 2022, **24**, 4147.