

## Thermal property measurement of fractal structure

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The urban heat island in Kyoto happens at night. It doesn't reflect in temperature in daytime. We still feel, however, that it is hotter than suburbs in the city. It is one of factors that surface temperature is higher in urban area than suburbs. There are many concrete and asphalt which become very high surface temperature by insolation in urban area. Because infrared rays are radiated from surfaces corresponding to those temperatures, we feel that it is hot.

It is a factor that difference between a structural of the city and suburbs if we feel that it's hot by the heat radiation. The city consists of many buildings of several tens of meters and those are flat structure. On the other hand, the suburb consists of many leaves of several of centimeters and fractal structure. It is thought that surface structures of suburbs can reduce surface temperature.

Therefore we made demonstration experiments of fractal shade. It's made up of Sierpinski's tetrahedron which is the same fractal dimension as trees. This experiment's contents are observations of surface temperature, radiant environment and coefficient of use fractal shade or parasol, and questionnaire survey.