Preliminary Exploration of Fractal Geometry and the Application of Fractal Measurement To Explore the Fractal of Rock Sugar and Hydroxide

Bai, Bozhi (School: Hefei NO.1 High School)

Fractal geometry is geometry that describes complex things or phenomena. In this topic, the author summarizes some basic knowledge of fractal geometry, studies the interesting properties of classical fractals, discusses the understanding and perception of fractal geometry, and completes the basic fractal patterns through programming. Using the methods of fractal measurement such as "number box method" and "perimeter-area relationship", the author has carried out relatively successful research on rock sugar and hydroxide, measured the fractal dimension of some substances, and made accurate results. The degree of verification is carried out using the knowledge of fractal measurement to transform from the fractal dimension of the cross section to the fractal dimension of the surface. Gained useful insights into the complexity of fractals and material contours.

Awards Won: