

The application of fractals geometry to structural characterization by light microscopy of microspheric catalysts

Melita VISINESCU, Valentina ALBU and Mihaela POPESCU

National Research Institute for Petroleum Processing, Ploiesti

Abstract. Light microscopy images can be used to structural characterization of microspheric catalysts for particles size less than 100 μ . By this method it can obtain detailed information about: surface morphology, particles size, polarized light cristalinity and internal porous structure in correlation with mechanical resistance and thermal stability. For quantitative characterization of irregular dispersions and conformations may be used the fractal geometry as application of digital analysis of images and presents *the Cantor set, the Sierpinski-Menger sponge* and *the "fractal cheese from Appenzell"*. The methods of light microscopy give information regarding complex characterization of microspheric catalysts, new or used in various processes in oil and petrochemical industry.

Keywords: fractals, microscopy, image analysis, microspheric catalysts
