



NANOPARTICLE-BASED MATERIALS FOR CATALYSIS

Radu – Claudiu Fierascu^{1,2*}, Irina Dumitriu^{1,2}, Rodica – Mariana Ion^{1,2}

¹*National Research & Development Institute for Chemistry and Petrochemistry – ICECHIM, 202 Independentei Splai,
060021, Bucharest*

²*Valahia University, 2 Carol I Blvd., Targoviste*

Abstract

Highly dispersed nanoparticles of transition and noble metals are utilized for hydrocarbon reactions and rearrangements important to the chemical industry. The need to obtain 1 to 3 nm particles with narrow size distributions has prompted the development of alternative processing methods. Due to widespread speculation concerning the enhanced properties of nanoparticles over their bulk and atomic material equivalents, nanoparticle synthesis has become an active field of research within both scientific and industrial communities. Nanoscale-sized particles have been found to exhibit enhancements in material properties such as diffusivity, toughness, hardness, and optical emission, among others. For this reason, catalysis has become a current area of interest in terms of nanoparticle synthesis and coatings, as a significant increase in the catalytic activity of noble metals with shrinking particle dimensions has been demonstrated.

Key words: carbon nanotubes, catalysis, nanomaterials

* Author to whom all correspondence should be addressed: e-mail: radu_claudiu_fierascu@yahoo.com; Phone: +4.021.316.30.94