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Abstract

Plasma Modified Graphene Oxide Based Ultrafast Micromotors

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Abstract:

Self-propelled artificial micromotors based on the catalytic conversion of chemical energy into motion and forces have been of growing interest due to their broad range of (bio) chemical science and industrial applications [1, 2]. Specifically regarding has been given to chemically powered micromotors that display self-propulsion in the presence of hydrogen peroxide (H2O2) fuel [3]. The fuel is very important for self-propelled catalytic micromotor applications [4]. H2O2 fuel where the surface of the platinum based micromotors catalyzes its decomposition to generate water (H2O) and oxygen (O2) bubbles. The motion of chemically propelled micromotors depends on the surfactant and fuel concentration. Fuel concentration affects the rate of bubble generation. Surfactants can increase the interactions between the surface of platinum and H2O2 fuel with decreasing surface tension [5, 6]. Tubular micromotors generally electrochemically synthesized because sophistication of template electrosynthesis methods allows new compositions and structures, with improved catalytic performance and new functionalities for micromotors [7]. In this work, GO was produced using hummers method.

Biography:

Prof. Dr. Aysegul UYGUN OKSUZ graduated from Department of Chemistry, 19 May University, Turkey in 1993 and received PhD- degree from Gazi University, Ankara-Turkey (2002). She studied at South of Florida (US), University of California-San Diego (US), Wisconsin University (US) and Freiburg University (Germany), as a post-doctoral research scientist in 2008, 2011, 2013, 2004.She became professor in 2011, and she has already been working as professor in Suleyman Demirel University, Isparta. She published over 125 papers in international and national journals; she joined over 160 conferences and symposia in international and national level. She has works onto the synthesis and characterization of conducting polymers and their composites with different

metal nanoparticles, metal oxides and carbon nanomaterials using different methods such as chemical, electrochemical and plasma polymerization. Her research fields are electrochromic devices and biosensors applications of the materials. She recently has worked on micro/nanomotors including polymer hybrid systems.

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