An overview of the application of emerging nanomaterials

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In recent years significant progress has been made in nano-science and technology research, including important breakthroughs in areas such as energy conversion and storage, biosciences and health, electronic devices etc. However, there are not many products available in the market based on nano-science research. A clear idea about industrials requirement, choice of appropriate materials and synthesis techniques, along with dedicated researchers are the key strategic parameters for the large scale development nano-products. We investigated application possibilities of nanomaterials and nanostructured surfaces in various emerging areas, e.g., i) energy generation and storage material, ii) in biosensors, iii) next generation electronic devices, iv) water treatments. This presentation will detail our research efforts in the above areas with a focus on manipulation of nanomaterials and tuning their various properties. This talk will also highlight technical challenges and possibility of these novel materials in their industrial applications in coming years.

With Prof. V. Ramgopal Rao (IIT-B)