OMICS International

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2nd International Conference on

Past and Present Research Systems of Green Chemistry

September 14-16, 2015   Orlando, USA

Towards sustainable surface processing and products through Green Chemistry and engineering

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The global drive towards the reduction of energy consumption, emissions and minimisation of waste are increasingly important and becoming major technological, political and societal issues. A promising approach to address the current challenges is to adopt green chemistry and sustainability during process design, innovation, integration and optimisation. The use of green chemistry and process intensificationin the processing of polymeric, inorganic and composite materials will be described. The emerging of eco-friendly and sustainable non vacuum chemical processing technologies will be presented for the production of nanostructured materials and high value added superthin/thin films and thick coatings. These processes that are not only low cost, less polluting, conserve energy, reduce waste but also increase efficiency and enhance product performance. Case studies leading to sustainable products and increasing profits for a variety of applications, including fine chemicals, clean energy, engineering, and biomedical sectors will be presented.

Biography

Kwang-Leong Choy obtained her DPhil from the University of Oxford in materials science. She joined Imperial College London in 1994 as a faculty staff. In 2002, she took up a Chair in Materials at the University of Nottingham. She is now a Director of the Institute for Materials Discovery at University College London. Her research interest focuses on the development of novel, cost-effective, sustainable non-vacuum chemical vapour processing of nanomaterials, functional superthin/thin films, nanocomposite coatings for various structural and functional applications in aerospace, clean energy, and materials engineering and biomedical sectors.

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Organic Chem Curr Res

ISSN:2161-0401 OCC, an open access journal

Green Chemistry 2015

September 14-16, 2015

Volume 4, Issue 2

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