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Corrosion control and nanomaterials

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Abstract

The science and technology of nanomaterials is the major turning point in the industrial development of the twenty-first century. Most industrial sectors and biosciences have benefitted greatly from manipulation of materials at the nanometer scale. Nanotechnology has benefitted the field of corrosion prevention to a considerable level and much advancement is expected in the near future. A number of research investigations have been done in this direction on various aspects such as electrochemical corrosion or high temperature oxidation resistance of nanostructured materials, application of nanomaterials in enhancing the barrier properties of advanced surface coatings and nanotechnology associated smart coatings. The presentation covers different roles of nanomaterials in the corrosion control scenario and the methods to enhance the corrosion resistance of nanostructured materials. Advanced nanotechnology associated surface coating strategies will be highlighted.

Biography

Viswanathan S. Saji has received M.Sc. (1997), M.Phil. (1999) and Ph.D. (2003) degrees from the University of Kerala, India. He was a Research Associate at the Indian Institute of Technology, Bombay (2004-2005) and the Indian Institute of Science, Bangalore (2005-2007). Later, he shifted to South Korea and has been employed as a Postdoctoral Researcher at the Yonsei University (2007-2008) and the Sunchon National University (2009); Research Professor at the Chosun University (2008-2009); Senior Research Scientist at the Ulsan National Institute of Science and Technology (2009-2010) and Research Professor at the Korea University (2010-present). He is (co-)author of more than 40 scientific publications; edited one book and contributed 3 book chapters.