
Title: Functional Coatings Derived Through Wet Chemical Coating Technologies

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Proposal

The unique properties of nanostructured materials obtained through wet chemical method are now well appreciated and utilized. Amongst the available coating deposition techniques, for surface engineering applications, nanocomposite coatings generated by wet chemical route have been shown to be viable. Organic-inorganic hybrid nanocomposite coatings have been and are being commercially exploited for various applications, like anti-reflective, solar selective, solar control, corrosion protection (barrier and self-healing type), anti-bacterial, self-cleaning/photocatalytic, easy-to-clean hydrophobic/ice-phobic, scratch and abrasion resistance etc. The most obvious advantage of organic-inorganic hybrids is that they can favourably bring synergy between the dissimilar properties of organic and inorganic components in a single material, thereby paving way for generating multifunctional coatings in a single step coating deposition. Other notable advantages of the hybrid nanocomposite coatings are: a) flexibility of coating and compatibility with organic paints; b) suitable for deposition on wide variety of substrates; c) amenable to automation and d) ease of coating deposition, e.g. use of spray, dip and spin coating techniques.

This special issue will focus on the unique nanostructured functional coatings that the wet chemical coating technology can generate like e.g., ice-phobic coatings, self-healing coatings, self-cleaning coatings, anti-reflection coatings, hard coatings etc. on various kinds of substrates, which have very good scope for commercialization.
