

New trends in decorative and functional coatings

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Industrial manufacturers of ceramic tiles, window glasses, car and house accessories or domestic appliances are increasingly interested in new decorative coatings, deposited by cleaner processes. Beyond the prevention of pollution, there is an opportunity to reach a multiple goal: new colours and optical effects, higher resistance to wear or corrosion and, even more important, the possibility of providing new functionalities to the coated surfaces like hydrophobic, self-cleaning, biocide or hypoallergenic properties.

Vacuum coating technologies, like PVD are the main candidate to provide reliable and versatile methods to coat a broad range of material substrates, including metals, ceramics, glasses or polymers. In order to achieve mass-productive industrial processes there are some challenges to be dealt with, as the implementation of homogeneous large area or continuous processes or the temperature control in the case of low melting point substrates.

To meet this goal, a new research project in the decorative-functional coating field is running from the beginning of 2007. This project, titled CENIT ART-DECO (Advances in Decorative-and Functional Coatings), 14 Spanish companies and 12 research institutes will collaborate during four years (2007-2010), investing a budget of 25 million Euros.

This paper details the research lines and the early results of the ART-DECO project. Objectives, methodology and the preliminary advances in the different strategies are summarised.

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