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The times are changing. New surface treatments based on nanoceramics coatings

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Last century, the state of the art of surface treatment prior to paint was the phosphating process. This has undergone continuous improvement and is nowadays still used on all relevant materials. Nevertheless, phosphating process has serious drawbacks: high amount of sludge is generated which needs to be removed and disposed of as special waste; large volume of water and great expense of energy. Proquimia has been working for the last years on new environmentally friendly treatments. These new processes which work at room temperature do not yield sludge. They use the technology of Liquid Phase Deposition to get ceramic coats on metal surface. The coat which is uniform and thin, 50-200 nm, can be based on zirconium oxide, zirconium phosphate, or a binary zirconium, calcium or manganese phosphate depending on the metal to treat and the properties required. Actually new developments and projects involve amphiphilic silanes as precursor of the nanocoats. In this case, the technology used to get the coat is sol-gel and does not content any metal.

Biography

Josep Vives received his PhD in chemical from University Autònoma de Barcelona, in the year 1987. For last 30 years, he is working in surface treatment processes in several companies: Diversey (Novamax), Chemetall and Proquimia. He has worked in processes on aluminum, cold roll steel, galvanized steel, prior to paint for architectural, car body, and general industry. Last years, in Proquimia, he has developed several R&D projects concerning new treatments based on nanoceramics coatings.

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