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### **Molten salts & molten salts technology: Past, present and future in materials and processing technology**

In the past molten salts were associated to the high temperature corrosion processes that appeared in the combustion of fossil fuels or that appears in gas turbines. From years ago renewable energies appear in the molten salts scenario, for example with the development of biomass and waste incineration plants, where the production of energy is also associated with the undesirable molten salts that corrode the plant and decrease at the same time their lifetime. On the other hand, it appears technologies, far away from dealing with undesirable salts, they want to use the properties of molten salt systems to use them in the power plants: this is the case of molten carbonate fuel cells and solar power concentration plants (CSP), as thermal storage fluid. The possibility to increase their efficiency and to be more competitive energy resources, in comparison with fossil and nuclear, deals with molten salt technology, and new molten salts mixtures development. A review of the corrosion mechanisms of those above different applications will be done, with the possibilities in the use of coatings for corrosion protection and the possibility to use their capabilities to monitor the corrosion “in situ” for the electrochemical corrosion mechanism associated with this corrosion phenomena. According to this a new hot corrosion mechanism under dynamic conditions will be established for the operating conditions in CSP plants, The future roadmap for those molten salts technology processes and materials design associated with will be described in order to establish their potential capabilities.

### **Biography**

Dr. Francisco Javier Pérez, is a Director of Material science and metallurgy Engineering at Universidad Complutense de Madrid, Spain. His international experience includes various programs, contributions and participation in different countries for diverse fields of study. His research interests as a Scientist reflect in his wide range of publications in various national and international journals.

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