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Titre de la thèse :

Impact of chemical environment on degradation mechanisms in thin film  
photovoltaics

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In the existing reliability approaches in photovoltaics (PV), the effects of the chemistry of the “in use” environment, which can result from climate, atmospheric pollution, leaching from the cell materials or degradation of the encapsulating material, are usually disregarded. The degradation mechanisms could however be strongly affected by the environment. This is in particular important for thin film PV. The proposed work aims to apply the approaches developed in corrosion science in order to understand degradation mechanisms in thin film PV systems and in particular, the effect of the chemistry of the environment on these mechanisms. Model systems and full assemblies (PV cells) will be produced and studied in specifically designed ageing procedures by a combination of in situ and ex situ methods (Raman, photoluminescence and Auger electron spectroscopy, SEM EDS, electrochemistry, light optical microscopy, etc).

**Mots clés** : thin films, encapsulation, atmospheric corrosion, confined zone