



Contribution ID: 26

Type: **Poster (Chemistry SIG)**

Investigating surface properties of SnO₂ doped with various adsorbates

Conventional p-n junction based silicon solar cells are costly for reasons such as production methods and high-priced materials. SnO₂ due to its outstanding electrical properties it's regarded as reassuring competitor for photovoltaic cells. Absorption of water and oxygen on SnO₂ then becomes a primary understanding for several application of metal oxide including glass coating, ceramic glazes, and gas sensing. The independence of size, shape and surface of the material for the photovoltaic devices are considered. The number of atoms on the surface, the bond formation such as the hydrogen, Van der Waals and Columbic significantly changes the properties of the material. In this project, computer simulation methods will be used to investigate SnO₂ materials for application in solar cells.

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Session Classification: Chemistry and Material Science SIG Seminar

Track Classification: Chemistry and Material Science SIG Seminar