

## NiOx as Hole Selective Contact to Improve Stability and Efficiency of Inverted Perovskite Solar Cells via Vacuum Flash Technique

*Monday 21 May 2018 15:30 (15 minutes)*

### Abstract

The research in organic-inorganic halide perovskite solar cells (PSCs) is taking an upward trend. This is due to their excellent photovoltaic efficiency which is exceeding 22%, ease of processability and low cost. In order to meet the energy demand of the world using this technology, the stability and efficiency of PSCs need to be enhanced. This can be achieved by using hole-transporting materials (HTMs), which are fundamental building blocks of PSC architecture. It was reported that the utilization of a NiOx layer in PSCs increases an overall device performance due its high hole mobility, good stability, wide band gap, high transmittance and easy process ability. In this talk, I will present preliminarily results of the NiOx layers prepared by low temperature solution process for the development of stable and more efficient in inverted planar PSCs. In addition, the development of vacuum Flash technique (VFT) for preparing high crystallinity of a perovskite layer in ambient air will be presented and discussed.

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**Session Classification:** A5: Nanoscale and Surface

**Track Classification:** Surface, Interface and Thin Film