

## **Novel Materials and Process for Commercialization of Perovskite Solar Cells**

*Hyun Suk JUNG, School of Advanced Materials Science and Engineering, Sungkyunkwan University*

All solid-state solar cells based on organometal trihalide perovskite absorbers have already achieved distinguished power conversion efficiency (PCE) to over 23% and further improvements are expected up to 25%. These novel organometal halide perovskite absorbers which possess exceptionally strong and broad light absorption enable to approach the performances of the best thin film technologies. To commercialize these great solar cells, there are many bottlenecks such as long-term stability, large scale fabrication process, and environmental issues.

In this presentation, we introduce our recent efforts to realize perovskite solar module and solve environmental issues, which will facilitate commercialization of Perovskite photovoltaic system. For examples, we introduce a recycling technology of perovskite solar cells, which will facilitate the commercialization as well as solve the environmental issues of perovskite solar cells. Also, we are going to show new fabrication method of highly crystalline SnO<sub>2</sub> nanoparticle layers for large area electron transport layer. Also, we will show a large-scale coating methodology for enabling large size module fabrication by using a new solvent extractor, anisole.