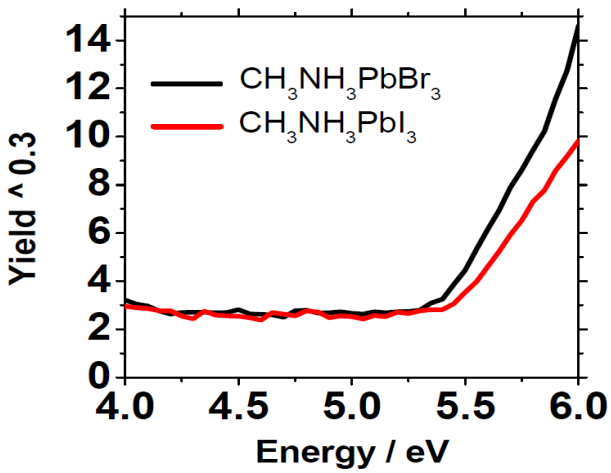
RIKEN KEIKI

Organometal Halide Perovskite as Visible-Light Sensitizers for Photovoltaic Cells



Result of WF analysis by AC-3[1].

Work function analysis of perovskite materials by AC-3

In 2009, Prof. Miyasaka and co-workers reported a novel type solar cell with perovskite materials[1]. The paper, which is now cited for over 10000 times (according to Google Scholar result), has attracted many interests in the world.

The analysis was carried out at the Segawa Lab in the University of Tokyo. From the energy where the photoelectron emitted, the valence band energy of $CH_3NH_3PbBr_3$ or $CH_3NH_3PbI_3$ were calculated as 5.38eV and 5.44eV, respectively. Furthermore, the conductive energy was calculated from the band gap obtained by photoabsorption measurement and the above valence band energy.

It was turned out that electrons can be injected from perovskite materials into TiO_2. With this result, AC-3 is proved to be so useful that contribute to those novel researches.

[1] Akihiro Kojima, Kenjiro Teshima, Yasuo Shirai and Tsutomu Miyasaka, *J. Am. Chem. Soc.*, **2009**, 131 (17), pp 6050–6051

Photoemission Yield Spectroscopy in Air : PYSA

Model : AC-3

Features

Sample tray for powder

- **No need for vacuum, can measure in air**
  → Various types of samples available without any pre-treatment.
- **Further range for more applications**
  → Measure ranges from 4.0 to 7.0 eV, capable for more materials.

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