

北海道大学 大学院工学研究院 材料科学部門主催

第 112 回マテリアルセミナー

下記の要領で第 112 回マテリアルセミナーを開催いたします。陳先生は台湾大学においてグラフェンなどの 2D 材料を用いたエネルギー変換では非常に著名な先生です (Outstanding Researcher Award, Taiwan in 2011 and 2015)。教員学生のみなさんには多数ご参加くださいますようお願い申し上げます。

記

日時：平成 30 年 2 月 7 日 (水) 14 時 30 分 ~ 15 時 30 分

場所：北海道大学工学部 材料化学棟大会議室 (MC526)

講師：Department of Materials Science and Engineering,
National Taiwan University

國立台灣大學材料科學與工程學系

Professor Chun-Wei Chen 陳俊維 教授

題目：Two-dimensional materials with novel functionality for
photon-to-energy conversions

In this talk, I would like to present several novel energy conversion systems based on 2D materials. In the first part, I would like to address the energy conversion systems based on graphene and other 2D atomic layer materials. Strong light-matter interaction at the graphene-heterostructures results in novel functionality in photovoltaic and photochemical conversions. Here, we demonstrate the examples of “crack-filled graphene (CFG) films” and “sunlight-activated” transparent electrodes” for high-performance solar cell applications. I would like to address the new application of using 2D atomic oxides as efficient electron or hole transporting layers in polymer solar cells and organic-inorganic perovskite solar cells developed in our lab. In the second part, I would like to also present our recent result of the investigation on the photochemical cell application based on 2D atomic layer materials. Finally, I would like to address some results related to organic-inorganic hybrid perovskite solar cells and the new discovery in the emerging field of 2D layered perovskites in our group.

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