Final Announcement

特 別 講 演 会

主　催：　（公）日本材料学会半導体エレクトロニクス部門委員会

日　時：　平成３０年２月１６日（金）　**10:30～12:00**

場　所：　**〒565-0871** 吹田市山田丘 **2-1**
大阪大学大学院工学研究科マテリアル生産科学専攻
マテリアル科学コース　会議室（**R2** 棟 **2** 階 **319** 室）
http://www.eng.osaka-u.ac.jp/ja/campusmap.html

講　師：　**Prof. Tom Gregorkiewicz**
Van der Waals - Zeeman Institute, University of Amsterdam

題　目：　**Fundamental optical processes for advanced energy harvesting schemes in future photovoltaics**

概　要：　The efficiency limit of photovoltaic energy conversion appears due to the mismatch between the broad-band character of the solar radiation and the discrete operation mode of solar cells. One remedy would be transformation of the solar spectrum before entering a photovoltaic device. A solar shaper should “cut” large energy (UV) photons and “paste” together small (IR) ones. In this lecture, I will discuss different phenomena that could help to realize such a shaper. Then I will zoom in on recent research by my own group on how Si and Ge nanocrystals could be used for shaping of the solar spectrum.

[1] M.T. Trinh, T. Gregorkiewicz *et al*., Nature Photonics 6, 316 (2012). [2] K. Dohnalova, T. Gregorkiewicz *et al*., NPG Light: Science and Applications **2**, e47 (2013). [3] S. Saeed and T. Gregorkiewicz, Nature Communications **5**, 4665 (2014). [4] F. Priolo, T. Gregorkiewicz *et al*., Nature Nanotechnology **9**, 19 (2014). [5] S. Saeed, T. Gregorkiewicz *et al*., NPG Light: Science & Applications **4**, e251 (2015). [6] de Boer, T. Gregorkiewicz *et al*., Nature Nanotechnology **12**, 932 (2017) [7] de Jong, T. Gregorkiewicz *et al*., NPG Light: Science & Applications **7**, e17133 (2017).

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