

# Colloquium on Green Nanomaterials

## INSd NanoScience Seminar No. 32

主催： 大阪大学国際共同研究促進プログラム

共催： 大阪大学工学研究科附属構造・機能先進材料デザイン教育研究センター、大阪大学ナノサイエンスデザイン教育研究センター、博士課程教育リーディングプログラム「インタラクティブ物質科学・カデットプログラム」

日時： 1月21日（火） 15:00～18:00

場所： ・工学研究科マテリアル科学コース・会議室（R2棟3階319室）  
・ナノサイエンスデザイン教育研究センター・会議室  
（文理融合型研究棟3階304室）

講師： Prof. Peter Schall  
Van der Waals - Zeeman Institute, University of Amsterdam

題目： **Photonic and excitonic coupling in quantum-dot supercrystals**

概要： The assembly of colloidal quantum dots (QDs) into supercrystals holds great promise for novel photovoltaic devices, but needs efficient light absorption and carrier transport. Here, we study the growth of CdSe and inorganic perovskite QD supercrystals and show that they simultaneously enhance the absorption efficiency and inter-dot coupling of QDs.

講師： Prof. Yasufumi Fujiwara  
Graduate School of Engineering, Osaka University

題目： **Semiconductors intracenter photonics; red LED using Eu-doped GaN**

概要： The ongoing search for an efficient red LED based on GaN is pivotal to the realization of micro-LED display. We invented a novel red LED using Eu-doped GaN, exhibiting characteristic emission properties. Current status of the red LED and strategies toward further enhancement of its output power are presented.

問合先： 藤原 康文（工学研究科マテリアル生産科学専攻）



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Organized by International Joint Research Promotion Program

Co-organized by Education and Research Center of Advanced Structural and Functional Materials Design,  
Institute of NanoScience Design, and Program for Leading Graduate Schools; Interactive Materials Science Cadet

**Date:** January 21 (Tue) 15:00~18:00

**Place:**

- Room 319, 3<sup>rd</sup> floor in R2 Building, Suita Campus
- Room 304, 3<sup>rd</sup> floor in Interdisciplinary Research Building, Toyonaka Campus

**Speaker:** Prof. Peter Schall

Van der Waals - Zeeman Institute, University of Amsterdam

**Title:** Photonic and excitonic coupling in quantum-dot supercrystals

**Abstract:** The assembly of colloidal quantum dots (QDs) into supercrystals holds great promise for novel photovoltaic devices, but needs efficient light absorption and carrier transport. Here, we study the growth of CdSe and inorganic perovskite QD supercrystals and show that they simultaneously enhance the absorption efficiency and inter-dot coupling of QDs.

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**Contact person :** Prof. Yasufumi Fujiwara, Graduate School of Engineering

