# 第4回　OPERA研究交流セミナー
## 第3回ISIT有機光エレクトロニクス研究特別室セミナー
## 第63回　未来化学創造センターセミナー

日時：2010年9月24日（金）、13：30～15：00
場所：総合学習プラザAMS講義室1（207号室）

## 「Organic Solar Cells: Encapsulation, Scaling, and Physics」

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Solar energy has the potential to significantly impact modern life with distributed, portable, and clean energy production. With more energy delivered by the sun to the earth in one hour than electricity used by the entire world in one year, the real question is how to effectively harness this vast energy source. Organic, thin-film solar cells are one of the newest technologies for the direct conversion of sunlight into electricity and could lead to inexpensive, light-weight, flexible devices. Though organic solar cells have been demonstrated with power conversion efficiencies up to ~8%, many challenges remain to be solved for widespread application.

This presentation will focus on research related to three of these issues: encapsulation, scaling, and device physics. Encapsulation strategies with single and multilayer thin films will be discussed and demonstrated with pentacene / $C_{60}$ solar cells. With regards to scaling, a grid for reducing series resistance and increasing performance in large-area devices will be presented and modeled. Finally, device physics will be explored by studying device characteristics as a function of temperature for heterojunctions with a variety of materials. With continued development, organic solar cells could play a major role in future energy production.

主催：九州大学最先端有機光エレクトロニクス研究センター
共催:九州大学未来化学創造センター
共催:九州大学 グローバルCOE「未来分子システム科学」
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