

(株) イデアルスター太陽電池勉強会資料

「Active Layer Research for Forthcoming Organic Solar Cell」

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- Rational Fluorination of Donor Polymer on High Performance Organic Solar Cell Based on Simple & Low Cost **PTQ:Y6 Binary Blend** with PCE:16.21%
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- High Efficiency and Low Energy Loss OSC with **Asymmetric End Group FREA**

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「Active Layer Research

1. Introduction

有機太陽電池の実用化に向けての研究開発競争は激化しており既に小寸法の素子では 16% 超の変換効率も多数報告されている。(株) イデアルスターでは 4 年間(2013.5~2017.4)に亘り「有機太陽電池の基礎」と題して社内における勉強会内容のネット開示を行ってきた。今回は 2017.9 以降に行った活性層研究”Active Layer Research”に特化した勉強会内容の開示である。有機太陽電池特性は活性層以外の諸特性に支配されることは周知の事実である。

勉強会内容ではこれらの事情を承知の上で敢えて”Active Layer Research”に特化している。その理由は活性層内部における **Charger Generation and Transport** 等がまだ完全には理解されておらず現象を理解するためには勉強の余地が多く残されていると考えるからである。更に重要な点はこれらの現象が有機材料独特の多彩な化学構造に支配されることである。以上は新規参入者にとっての極めて大きな魅力となる。本開示では第2章及び第3章の前半において基礎的事項に重点を置き、後半の第4章では基礎事項の応用について述べる。最終の第5章の「その他」では半透明太陽電池や **Perovskite Solar Cell** との組み合わせの可能性等について述べる。