

Department of Physics

Condensed Matter Physics

Clarendon Laboratory, Parks Road, Oxford OX1 3PU



CONDENSED MATTER SPECIAL SEMINAR

Friday 5 July at 4pm

“Printable interface layer and electrode for fully solution processed flexible and semitransparent solar cells”

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Organic and perovskite solar cells have received considerable attention and have demonstrated great potential as flexible, lightweight, transparent, and low-cost energy sources due to their intrinsic lightweight and flexible properties. Recently, because of the rapid developments in the synthesis of new materials, optimization of the active layer morphology, and interface engineering, the power conversion efficiencies (PCEs) of organic solar cells have exceeded 16% and 17% for single and tandem solar cells, respectively. And highest performance above 24% was reported for the perovskite solar cells. But, the development of large-area and printed cells (area > 1cm²) still severely lags behind the growth of small-area cells, especially those with flexible substrates and the cells with semitransparent properties. For the highly efficient flexible and semitransparent solar cells, transparent conducting electrode and interface modification are two important factors. Recent years, we fabricated flexible highly transparent conducting electrode based on metal grid and metal nanowires through various printing approaches and developed a series of printable buffer layer. With these electrodes and buffer layers, high performance flexible and semitransparent organic and perovskite solar cells have been fabricated. In this presentation, I will introduce our work on the flexible and semitransparent thin films solar cells.

Host: Dr Moritz Riede
Barnett Room, AOPP Building