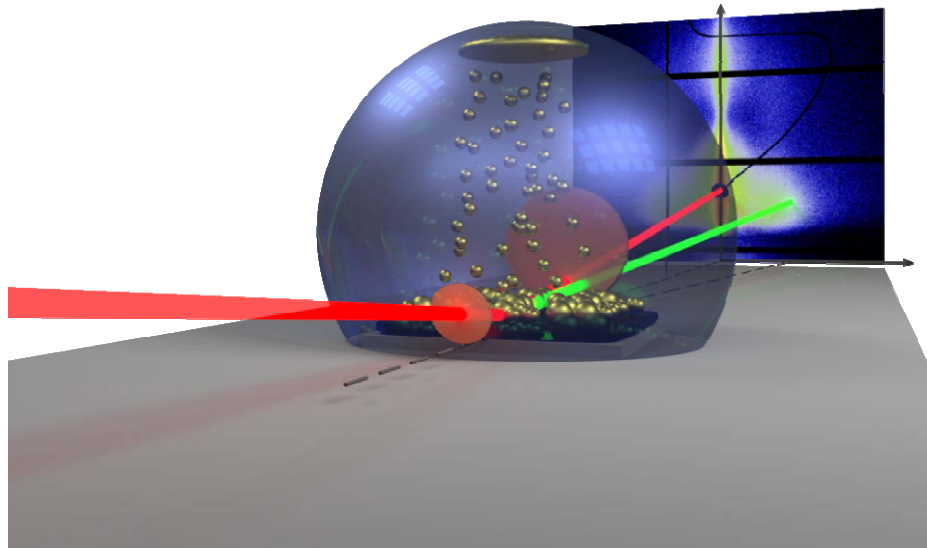


Doktorarbeit / PhD thesis

In situ investigations of electrode formation in organic solar cells during advanced sputter deposition



Am Lehrstuhl für Funktionelle Materialien der Technischen Universität München untersuchen wir die physikalischen Grundlagen von Materialeigenschaften mit modernsten Streumethoden (Neutronen-, Röntgen-, u. Lichtstreuung) und spektroskopischen Techniken. Generelles Ziel unserer Forschung ist es, aus der Kenntnis der mikroskopischen Struktur und Dynamik auf funktionelle Eigenschaften zu schließen.

Wir suchen einen Doktoranden zur Mitarbeit in dem Projekt "[In situ investigations of electrode formation in organic solar cells during advanced sputter deposition](#)". Die Vergütung erfolgt nach 1/2 TVL E13 für 3 Jahre.

Informationen zum Lehrstuhl finden Sie unter:

<https://www.groups.ph.tum.de/functmat/ueber-uns/>

Topic: Although organic electronic devices are mostly based on purely organic or organic-inorganic hybrid materials, many electrodes are still made from pure metals due to their unrivaled electronic conductivity. This implies that the polymer-metal interface plays a vital role for the final device performance. Research efforts have successfully established the application of ultrathin metal electrodes for (semi)transparent organic solar cells. The quality of the interface determines the extent of structural defects, which could increase the resistance and the chances of a short circuit. For research purposes, these back contacts are mostly applied using lab-scale methods, for example, thermal evaporation. In industry, however, large-scale techniques, such as sputter deposition methods, will be preferred. In collaboration with university Kiel and DESY Hamburg, we investigate in situ the formation of electrodes in organic solar cells during advanced sputter deposition. The influence of sputter parameters on the morphology of the electrodes and on the solar cell performance will be correlated.

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