

1) TITLE: **High efficiency next generation organic solar cells**

Next generation organic solar cells are solar cells beyond the silicon type photovoltaic devices. Organic solar cells have reached efficiencies in the champion solar cells well above 15%. Key element of such solar cells is the highly designed active layer, which transfers light into separated charge carriers. Aim of this experimental project is the preparation and full characterization of an active layer for high performance organic photovoltaic devices to further understand the fundamental correlation between morphology and solar cell performance. In this work a novel efficiency record-setting system will be investigated regarding the influence of an additional third component, in our case, either solvent additive or polymer. The project will involve a literature review, sample preparation, photovoltaic device fabrication and photoluminescent measurements. The focus is the usage of advanced scattering techniques for the determination of structural length scales of the active layer in the solar cell.

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