

LayTec to supply two InspiRe systems for in-situ monitoring of perovskite formation to Helmholtz Innovation Lab HySPRINT at Helmholtz-Zentrum Berlin

LayTec received purchase orders for two of its novel InspiRe in-situ reflectance metrology systems from Helmholtz Innovation Lab HySPRINT at Helmholtz-Zentrum Berlin. The systems will be applied for the in-situ-monitoring of perovskite formation processes. One system will be installed on a PVD chamber for perovskite vacuum deposition whilst the other will be used for analyzing the reaction kinetics of perovskite spin-coating and annealing processes. Helmholtz-Zentrum Berlin and LayTec also agreed to a bilateral cooperation agreement focusing on the joint development of advanced methods for the in-situ monitoring of perovskite formation under various process conditions. Up to now already several joint publications have been published pointing out the enormous potential of in-situ metrology for understanding the underlying processes of perovskite formations. In Fig.1 left, a) to c) results of the influence of the so-called “anti-solvent drip” on the spin-coating of MAPBr:FAPI solution (1:5) + 5% CsI (3CAT) are shown, which were presented on the European Photovoltaic and Solar Energy Conference (EUPVSEC) 2020. Additionally, a cover picture on the May issue of *physica status solidi b* was awarded to a joint article (doi.org/10.1002/pssb.202000479) of HySPRINT and LayTec (Fig.1, right). For further information please visit laytec.de/inspire and refer to the latest perovskite application note.

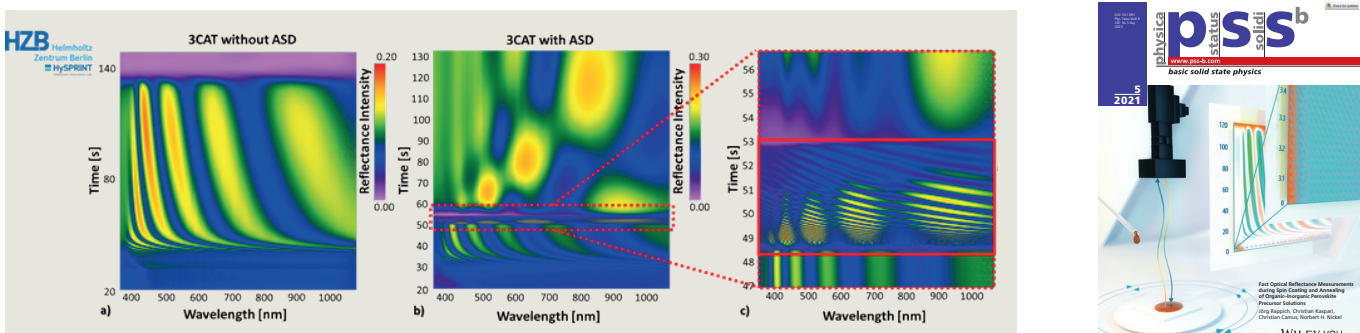


Fig. 1 Left: Reflectance spectrograms obtained during in-situ monitoring of 3-cation (3CAT) perovskite spin-coating without a) and with b) anti-solvent-drip (ASD). Additionally, the period directly after applying the ASD is shown enlarged in c); Right: Cover picture on *physica status solidi b* issue of May 2021 awarded to the joint paper of HySPRINT and LayTec

In-line thickness monitoring during R2R OLED and OPV manufacturing

LayTec extended the capabilities of its metrology system Flames to the particular requirements of coating processes for OLED and OPV devices. In the EU-funded research project Smartline, LayTec and its partners developed a fully integrated metrology system for in-line monitoring of these processes. Fig. 2 (right) shows a typical 3-head **Flames** system mounted in a roll-to-roll (R2R) coating system as well as exemplary data for the deposition of the 50 nm electron-transport layer onto PET coated with IMI (ITO-metal-ITO) layers (left). The thickness could be controlled in a very narrow window with a standard deviation as low as ± 1.6 nm. A “thickness excursion event” around measurement 3200 was also clearly resolved. With this system LayTec’s partner OET (www.oe-technology.com) was enabled of monitoring the layer thickness of the various OLED and OPV organic layers. For further information please visit laytec.de/flames and refer to the latest application note about OLED and OPV in-line monitoring.

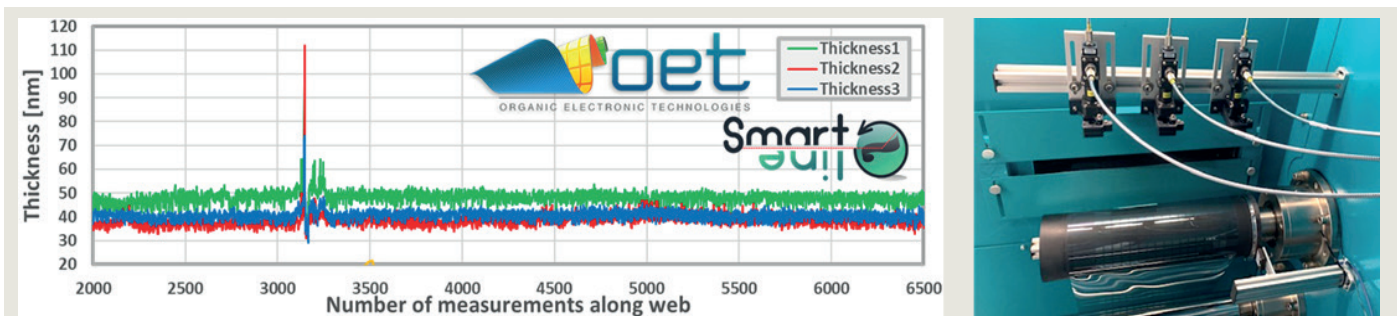


Fig. 2 Left: In-line thickness monitoring data as obtained with a 3-head Flames system during OLED / OPV production. Right: Photograph of the corresponding setup for in-line monitoring of the film thickness of organic layer stacks on flexible substrates in OET’s production line.

***** SAVE THE DATE: LayTec’s virtual in-situ seminar will take place on 5th October 2021 *****

Call for papers is open: Submit your contribution to marketing@laytec.de. The program will be announced later in 2021 on laytec.de.