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„Buried interfaces in organic electronic devices: x-ray reflectivity studies“

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The properties of the interfaces are crucial for the performance of electronic devices, since the charge transport at metal / semiconducting interfaces as well as along the semiconducting / dielectric interfaces are strongly determined by the interface properties. In organic electronic devices besides the interface roughnesses also the orientation of the molecules at the interface is crucial due to the large anisotropy of the charge transport. The talk will show how surface sensitive x-ray scattering techniques like x-ray reflectivity and grazing incidence x-ray scattering can be used to characterize buried interfaces in organic electronic devices. Examples on thin film transistors and organic photodiodes will be given. The properties of metal / organic interfaces and polymer / polymer interfaces will be described on specific examples and the influence to device performances will be discussed.