



Seminarankündigung

Dienstag, 15. Januar 2019

17:15 Uhr

WSI, Seminarraum S 101

“Kinetics and energetics of semiconductor interfacial reactions”

Photoinduced reactions in semiconductors are representing topical scientific fields, where interfaces play a decisive role for efficient applications. The key to specifically tune these interfaces is a precise knowledge of interfacial structures and their formation on the microscopic, preferably atomic scale. Gaining thorough insight into interfacial reactions, however, is particularly challenging in relevant complex chemical environments. The talk introduces material systems and corresponding critical interfaces significant for efficient applications in energy conversion and optoelectronics. It highlights appropriate analysis techniques capable of monitoring critical physicochemical interfacial reactions in situ during non-vacuum preparation and photoactivity studies addressing well-defined inorganic epitaxial reference surfaces, buried interfaces, and low-defect nucleation of disjunct epitaxial materials that are analyzed during preparation in chemical vapor environment. Interface formation, structure, photochemical interfacial reactions, and charge carrier dynamics are scrutinized down to the atomic scale in real time, also accounting for equilibrium versus non-equilibrium, kinetically driven processes, in order to accelerate progresses in the realization of efficient energy materials and in the exploitation of photoinduced processes at interfaces.

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