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S E M I N A R
aus
Halbleiterphysik und Nanotechnologie

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"Thin drug layers as first step towards future medications"

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By far the most amount of medication is delivered as solid dosage forms like pills which themselves are applied through the oral route. As such, the solid state behavior of drugs or more precise the active pharmaceutical ingredients (APIs) is of importance. The capability for processing, long time stability and dissolution properties are the key factors for successful therapy. For all these properties the polymorphic form is decisive of how an API performs in an application. Using various thin film deposition techniques, we are able preparing defined layers hosting API molecules at model surfaces, whereby these techniques often assist in the formation of defined polymorphs or even amorphous layers. Such API layers provide superior stability and dissolution properties. Using atomic force microscopy and various X-ray diffraction techniques information on these layers is gathered to understand the film forming and crystallization of APIs at solid surfaces and its resulting enhances dissolution rates.