



PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik
der Johann Wolfgang Goethe-Universität Frankfurt

Mittwoch, den 26.04.2017, 16 Uhr c.t.
Großer Hörsaal, Raum _0.111,
Max-von-Laue-Str. 1



Ass.Prof. Priv.-Doz. DI Dr. Harald Plank

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"3D Nano-Printing via Focused Electron Beams"

During the last decade, Focused Electron Beam Induced Deposition (FEBID) has evolved from a new technology into a highly versatile tool for direct-write, bottom-up fabrication of high-resolution nanostructures, virtually applicable on any substrate material and morphology. This is of particular relevance as it complements situations in which traditional nanofabrication approaches (e.g. wet chemical lithography) can barely be applied. While the fundamental understanding of FEBID based fabrication for planar and bulky 3D structures has made tremendous progress in recent years, this technology also allows the fabrication of complex, freestanding 3D nano-architectures as discussed in this colloquium. First, the audience is introduced into the working principle of FEBID with strong focus on 3D fabrication including a discussion on current limitations. In the second part, we focus on new applications ranging from 3D plasmonics, gas / mass sensing concepts towards high-resolution 3D nano-probes for advanced atomic force microscopy. Finally, we give an outlook on remaining challenges with the vision to leverage this technology into the status of a predictable, generic 3D fabrication technology for entirely new applications in research and development.

Die Dozenten der Physik

local host: Prof. Dr. Michael Huth, michael.huth@physik.uni-frankfurt.de