High-quality Laser Cutting of Semiconductor and Corresponding Quantum Dots Preparation

Semiconductor materials as the precursors of multiple functional devices, such as solar cells, photodetectors, etc., are one kind of the most important materials all over the world. Their high-quality cutting is of significant importance for large-scale production, especially for solar cells whose unit layout is in extreme complexity nowadays. This requires the cutting technique to be extremely accurate, fast, flexible and program-based. Fortunately, laser fabrication, in particular the ultrashort pulse laser ablation, turns out to be a very promising technique to fulfill all the requirements in great demand for ultrafine cutting now. This thesis gives you a unique opportunity to witness and experience by yourself the rapid advance in this field. Meanwhile, in view of the rapid progress of nanotechnology, semiconductor nanoparticles achieved during the high-quality laser cutting, especially the quantum dots with the size in the range of 1-10nm, have big potential to be extensively applied in a great variety of fields, such biology, environment, optics, agriculture and so on. This thesis also offers you another opportunity to step into the fantastic nanotechnology realm to investigate their applicability in various fields related to industry and human daily life.

Abbildungen

Internet: http://www.uni-due.de/barcikowski

YouTube Channel: http://youtube.com/nanofunction