

Module title		Abbreviation
Nanotechnology in Energy Research		11-NTE-092-m01
Module coordinator		Module offered by
Managing Director of the Institute of Applied Physics		Faculty of Physics and Astronomy
ECTS	Method of grading	Only after succ. compl. of module(s)
4	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.
Contents		
Nanotechnology is of great significance for energy research. Energy efficiency can be heightened in numerous processes or applications by using special functional materials. This module covers special materials, surfaces and structures that have optimised properties due to effects of nanotechnology. It explains the underlying physical contexts. It uses specific materials and components as examples, such as thermal insulation materials, heat accumulators, functional nanoscale layer and particle systems with spectral selective properties, nanoporous vacuum insulations and electrode materials.		
Intended learning outcomes		
The students have specific and advanced knowledge of the application of nanotechnology in the field of energy research. They know methods of nanotechnology to influence the properties of materials and their applications. They are able to apply their knowledge to specific questions.		
Courses (type, number of weekly contact hours, language – if other than German)		
V + R (no information on SWS (weekly contact hours) and course language available)		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
a) written examination (approx. 90 minutes) or b) oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or c) project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or d) presentation/seminar presentation (approx. 30 minutes) Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.		
Allocation of places		
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Additional information		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Bachelor' degree (1 major) Nanostructure Technology (2010) Bachelor' degree (1 major) Nanostructure Technology (2012)		



Master's degree (1 major) Nanostructure Technology (2011)
Master's degree (1 major) Nanostructure Technology (2010)