

Proseminar for students of the Physics Bachelor Program, Summer Term 2016

AQUA Proseminar "Structure and Properties of Solids "

Contents: The module "Allgemeine Qualifikationen (AQUA)" of the Physics Bachelor course requires a 30 min proseminar talk to be given in English language.

date	topic (Thema)	oral presentation (Vortragende(r))	tutor (Betreuer)
	1 Crystal structure, symmetry elements and fundamental lattices (Bravais)		TW
	2 Interference of x-rays, Bragg-law, and Miller-Indices		TW
	3 Real and reciprocal lattice (Ewald construction)		TW
	4 Lattice constants by powder diffraction		TW
	5 Size of nano-particles (Scherrer equation)		TW
	6 Defects in crystalline solids		WS
	7 Diffusion in solids		WS
	8 Plasticity of crystals		WS
	9 Phase transitions		TW
	10 Thermal expansion of solids		TW
	11 Pyroelectric and piezoelectric effect		TW
	12 Ferromagnetism		TW
	13 Ferroelectricity		TW
	14 X-ray absorption by solids		TW
	15 Refractive index for x-rays (optics)		TW
	16 Microscopy with visible light and x-rays		TW
	17 Methods of crystal growth		WS
	18 Texture of polycrystals		WS
	19 Recrystallization		WS
	20 Nanomaterials		WS

Comments: To sign up please send an email with a ranked list of 2-3 topics as soon as possible to Julia Barth at Sekretariat ISP. The topics will then be assigned and communicated in the seminar on (schedule follows). Talks will be 30 min + 15 min scientific discussion and feedback. The language of the course is English.

WS
TW

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