
S E M I N A R
aus
Halbleiterphysik und Nanotechnologie

Mo, 5.11.2018, 11.15 Uhr, Hörsaal für Physik

“Tailoring the structure imperfection in ZnTe bulk crystals and improving the terahertz response”

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High singularity ZnTe based ingots in dimension of 60 mm are grown in this work by temperature gradient solvent method under Te-rich condition. V or Mn dopants are adopted to compensate the grown-in Zn vacancies and tailor the crystals photo-electric properties. THz response measurements using femtosecond Ti: sapphire laser indicate the generation and detection efficiency are enhanced compared to the intrinsic ZnTe. To further optimizing the THz spectroscopy and imaging applications, the size and distribution of macro scale imperfections have been investigated in ZnTe crystals. Simultaneously, the post growth processing including surface modification and wafer annealing were performed on ZnTe crystal.