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Annual Report 2013

Institute of Optoelectronics

Cover photo:

Scanning electron micrograph (courtesy of T. Aschenbrenner et al., Univ. of Bremen) of position-controlled GaN nanotubes with coaxial GaInN quantum wells on their side facets. The structures are realized using ZnO nanopillars as sacrificial templates. Single ZnO nanowires are grown on top of GaN pyramids using chemical vapor deposition (CVD).

Subsequently, the structures are transferred to our metal organic vapor phase epitaxy (MOVPE) reactor and overgrown with coaxial Ga(In)N heterostructures. The ZnO nanowires are etched during this process and allow the fabrication of GaN tubes with inner diameters of some hundred nanometers and integrated coaxial InGaN quantum wells.