Paul-Drude-Institut für Festkörperelektronik (PDI) - https://www.pdi-berlin.de/

PDI is a research institute in Berlin, Germany. We perform basic and applied research at the nexus of materials science, condensed matter physics, and device engineering.

Growth of Cubic GaN on 3C-SiC/Si(001) Using Plasma-Assisted Molecular Beam Epitaxy

Epitaxy

City: Berlin; Starting date (earliest): At the earliest possible; Remuneration: 13,90€/hour; Closing date: 31/03/26

Tasks

Cubic gallium nitride (GaN) is a promising material for high-frequency and optoelectronic devices due to its superior electronic properties and reduced polarization effects compared to its hexagonal counterpart.
However, growing high-quality cubic GaN is challenging due to the lack of a native substrate and the high density of defects arising from lattice mismatch and thermal expansion differences with available
substrates.
This study focuses on the growth of cubic GaN on 3C-SiC/Si(001). Since 3C-SiC is only available on silicon substrates, achieving high-quality 3C-SiC on Si(001) is itself a significant challenge. Improving the growth process and optimizing interface engineering can enhance the structural and electronic properties of cubic GaN films.

Requirements

Background in semiconductor physics, materials science, or related fields.
Experience or interest in molecular beam epitaxy and material characterization techniques.
Strong motivation to tackle scientific challenges in epitaxial growth.

What we offer

Modern labs with a wide range of experimental techniques
Supportive environment with experts for various scientific sub-fields
International and culturally diverse community
Location in the heart of Berlin with excellent public transport connections
Subsidized travel ticket

Application

Please send your applications in PDF form to: tahraoui@pdi-berlin.de or szegedy@pdi-berlin.de

More information at https://stellenticket.de/201877/TUB/
Offer visible until 26/03/26