

Controlled Growth of High Current Functional Semiconductor Systems.

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Growth of GaN and AlGaN monolayers on SiC by controlled co-deposition of Ga and Al reacting with atomic N produced by microwave excitation of nitrogen gas is reported. All the steps and processes involved require very high temperatures (ca. 900 – 1000). To obtain controlled high-quality interfaces and heterostructures, very low deposition rates have been used. This talk is focused on surface and interface and heterostructures investigation growth using high-resolution photoelectron spectroscopy with photon energies optimizing the surface sensitivity. Thus, maximum of information about many aspects of the growth processes and structure of the systems, is provided at the new ASTRID II facility (high brilliance and stability). Each step of the growth processes characterized in-situ by photoelectron core-level and valence band spectroscopy.

Acknowledgements:

The work has been developed within scientific collaborations with Kjeld Pedersen, Per Morgen and Zheshen Li. Ana G Silva has obtained support from EU (CALIPSO 312284) to carry out this project at ASTRID. The technical staffs at ASTRID are thanked for their support and help during the measurements.

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