

## HL 44: Invited talk: S. Krischok

Time: Wednesday 14:00–14:30

Location: H15

**Invited Talk**

HL 44.1 Wed 14:00 H15

**Surface characterisation and reactivity of clean GaN(000±1) surfaces** — PIERRE LORENZ<sup>1</sup>, RICHARD GUT<sup>2</sup>, MARCEL HIMMERLICH<sup>1</sup>, JUERGEN A. SCHAEFER<sup>1</sup>, and •STEFAN KRISCHOK<sup>1</sup>  
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This contribution summarises our present understanding of the surface properties of reconstructed GaN(000±1) thin films grown by plasma assisted molecular beam epitaxy and the early stages of the interaction with selected small molecules. The intrinsic properties of the pure

GaN samples have been analysed in-situ following the epitaxial growth mainly utilizing photoelectron spectroscopy (XPS and angular resolved UPS). Special attention is paid to the presence of reconstruction-induced surface states and their influence on surface band bending and electronic properties as well as the angular dependence of the valence band spectra. The initial surface-adsorbate-interaction and the related changes of surface electronic properties are discussed for the model molecules O<sub>2</sub> and H<sub>2</sub>O. The observed surface states reveal a high reactivity and vanish upon the initial stages of oxidation. Furthermore, adsorbate-related electron states are formed which will be discussed in terms of changes in surface dipole, band bending and work function. A comparison of the reactivity towards O<sub>2</sub> and H<sub>2</sub>O between different GaN surface modifications will be made.