

**InGaN/GaN multiple quantum wells –
How the preparation, band alignment and morphology influence their
luminescence**

Ing. Markéta Ziková, PhD., Ing. Filip Dominec, PhD.

The first part of lecture will be devoted to technology of preparation of multiple quantum well (MQW) structures on sapphire substrates, their band alignment with strong polarization field and their consequence to luminescence properties. The band alignment of prepared structures was modeled by NextNano software. Influence of internal electric field in MQW structures caused by polarization, impurities and QW number will be discussed.

In the second part of the lecture CL properties of MQW structures with different number of QWs ranging from 10 to 70 will be shown. CL results obtained under different acceleration voltages will be compared. The influence of structure morphology and V-pits on MQW luminescence properties will be discussed in detail, based on the literature and our results. The morphology of prepared MQW samples will be shown on SEM and AFM images.