

## TRR Guest Scientist Lecture / Seminar

Date/Time: 07.12.2015 / 3pm  
Location: Paderborn / Lecture  
Hall A6

**Prof. Dr. Hui Hu**

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### **INTEGRATED OPTICS ON SINGLE-CRYSTAL LITHIUM NIOBATE THIN FILM: SOME RECENT PROGRESS**

#### **ABSTRACT:**

High-refractive-index-contrast optical waveguides can enable ultra-small waveguide with cross-section dimension below 1  $\mu\text{m}$  and bending radii smaller than 20  $\mu\text{m}$ , facilitating the development of ultra-compact photonic integrated devices and circuits. For lithium niobate material, a high-refractive-index-contrast structure can be lithium niobate film on  $\text{SiO}_2$  cladding (lithium niobate on insulator, LNOI). Single-crystal 3-inch LN thin film wafer can be fabricated by ion implantation and directly bonding technologies. The recent progress of integrated optics on LNOI is reviewed, including waveguide structures, micro-ring resonators, periodically domain structures, Y-splitters, etc. The LNOI based devices will result in high-density integrated optics with highly efficient electro-optical, nonlinear-optical, and laser/amplifier devices.

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