

## **Mid-Infrared semiconductor lasers**

Jerome Faist, ETH Zurich, Switzerland

### Abstract

Over the last two decades, the mid-infrared has seen the development of a new generation of semiconductor laser sources that combine high optical power, low-dissipation and wavelength agility. At present, three technologies have been especially successful, based on type I interband transition, interband cascade and intersubband cascade. Each technology presents specific advantages in different wavelength regions.

Among recent developments, especially interesting for spectroscopy are the development of quantum cascade optical frequency combs because they offer a new paradigm for broadband spectroscopy.

The lecture will discuss both the basic physics and the key feature of this various technologies, as well as give an overview of its newest developments.