Laboratory for Ultrafast & THz Spectroscopy

Dr. Ingrid Wilke
Associate Professor of Physics
Department of Physics, Applied Physics & Astronomy, Center for THz Research
Rensselaer Polytechnic Institute

Graduate Research Assistantship

My research group has an opening for a graduate research assistant interested in THz Science & Technology. The position is sponsored through the National Science Foundation Award No. 10002040 *High power GaInAs photoconductive terahertz radiation source*. The objective is the development of a compact sub-picosecond THz-radiation source for time-domain (TD) THz spectroscopy and THz-imaging with an average power of 1mW operating at MHz repetition rates.

The research project is part of my research program on THz emission from narrow band gap semiconductors. Important applications of time-domain THz-wave techniques in basic and applied science are still limited by the power of the available sources. The development of bright, high bandwidth THz radiation sources is important in order to expand applications of these techniques. For this purpose it is necessary to understand the THz emission process as determined by intrinsic semiconductor properties such as dopants, majority and minority carrier concentrations, stoichiometric compositions, bulk crystal, thin film and nanostructure. The results of research enables the growth of narrow band gap semiconductor materials optimized for application as THz-emitter in time-domain THz-spectroscopy and imaging systems. Publications related to the research are listed on my webpage: www.rpi.edu/~wilkei.

Graduate students interested in this position should have a Bachelor’s or Master’s degree in physics, electrical engineering or materials science and should be academically on track for the Ph.D. program. Furthermore, potential applicants should have interest in experimental physics, optics, lasers, THz science & technology as well as semiconductor physics.

Interested students should contact Dr. Ingrid Wilke for more information by email: wilkei@rpi.edu or by phone: 518 276 6318.