

## *Curriculum Vitae of PD Dr. B.W. Roth*



### **Personal record**

Name: Bernhard Wilhelm Roth  
Nationality: German  
Date / place of birth: 13.11.1970, Kleinkopisch  
Work address: Institut für Experimentalphysik  
Universitätsstr. 1, Geb. 25.42 01.34  
Heinrich-Heine Universität Düsseldorf  
40225 Düsseldorf  
Phone: 0049-211-81-12331  
Fax: 0049 211-81-13116  
e-mail: Bernhard.Roth@uni-duesseldorf.de

### **Research interests**

- Trapping and sympathetic cooling of molecules
- High resolution spectroscopy
- Test of fundamental constants in nature
- Test of QED theories
- Laser physics / nonlinear frequency conversion
- Ultracold chemistry

### **Current position**

- Privat-Dozent at the Institut für Experimentalphysik, HHU Düsseldorf
- Group leader, in charge of two ion trap projects on sympathetic cooling, high precision spectroscopy and cold chemistry of simple (e.g. hydrogen) and complex (organic) molecular ions, starting from January 2002
- Daily supervision of several PhD and Diploma students, coordination of the work of several postdocs and trainees (so far)

## **Granted research**

- Nachwuchs-Forschungsförderung Universität Düsseldorf “Ultra-high resolution rotational spectroscopy of cold molecular ions”, support for a novel THz source

## **Teaching experience**

- Basic laboratory courses for undergraduate physics students (Univ. Düsseldorf/Bielefeld)
- Advanced laboratory courses for undergraduate physics students, e.g. “Femtosecond frequency synthesizers” (Univ. Düsseldorf), “Optical pumping of rubidium”, Mott-scattering of high-energy electrons (Univ. Bielefeld)
- Laboratory training courses “Laser physics” and “Nonlinear optics / nonlinear frequency conversion” (Univ. Düsseldorf)
- Basic laboratory courses for biologists, chemists, medics, etc. (Univ. Düsseldorf)
- Theoretical exercises for lectures “Experimental Physics 3”, “Electrodynamics”, Experimental Mechanics (Univ. Düsseldorf), “Nuclear Physics” (Univ. Bielefeld)
- Student seminar “Light-matter interaction”, together with Prof. O. Willi, Prof. G. Pretzler, and Prof. S. Schiller
- Lecture “Ultracold Molecules”, part of the bachelor/masters program (Univ. Düsseldorf)

## **Professional experience**

- Nov 2007-to date:** Privatdozent, Institute for Experimental Physics, Heinrich-Heine-University, Düsseldorf
- Jan 2002-Nov 2007:** Research Associate (“Habilitation”), Institute for Experimental Physics, Heinrich-Heine-University, Düsseldorf
- May 2001-Dec 2001:** Research Associate (“Postdoc”) in the Atomic and Particle Physics (Prof. G. Baum and Prof. H. Steidl), University Bielefeld

## **Education**

- May 2001:** Dr. rer. nat.,  
“Spinabhängige Asymmetriefunktionen in der elastischen und inelastischen Elektron-Cäsium-Streuung bei mittleren Energien”,  
Atomic and Particle Physics, University Bielefeld
- Sept 1997:** Dipl. Phys.,  
“Untersuchung spinabhängiger Effekte und differentieller Wirkungsquerschnitte in der elastischen Streuung von Elektronen an Cäsiumatomen”,  
Atomic and Particle Physics, University Bielefeld
- Oct 1992-Oct 1996:** Physics Studies, University Bielefeld

## **Languages**

English: advanced level (read, write, spoken, professional practice)  
French: basic (read, write, spoken)  
German: native

## **Memberships**

“Deutsche Physikalische Gesellschaft“ DPG (atomic and molecular physics section)