The research group “Femtosecond spectroscopy and ultrafast laser control” of Prof. Thomas Baumert at University of Kassel is looking for a

PostDoc (f/m; 2 years) within a German - French project:
Controlling Open Quantum Systems: A challenge for the future of quantum technologies
Salary will be according to TV13 (full scientist position)

Topic: The general goal of this project is to identify the extent to which the environment of a quantum system can be actively utilized for coherent control by tailored external electric fields. The specific task for the PostDoc will focus on adiabatic - i.e. efficient and robust - population transfer in molecules in solution where the environment induces relaxation and dephasing. The objective is to clarify to what extent the additional degrees of freedom which come into play in molecular strong field excitation can be addressed and exploited with specifically tailored femtosecond laser pulses in order to soften the influence of electronic decoherence caused by interaction with the solute. A description of the set up and a first experiment along that line can be found in


The PostDoc will have to design and perform the experiments in the lab, to evaluate the data using computational methods, to present the results on scientific conferences and publish the results in peer-reviewed journals. In addition he can use the lab infrastructure (high power femtosecond laser oscillator + polarization pulse shaper + commercial laser scanning microscope) for further own research interests.

Prerequisite: PhD in physics or physical chemistry with very good marks; good experimental skills in ultra fast laser technologies; ability to work in a team and capability to work independently.

The city of Kassel: Kassel (c. 200 000 inhabitants) lies in the geographic center of Germany and is connected very well to various modes of the transportation network. The city hosts the famous Documenta exhibition for contemporary arts and has about 24 000 students. The high recreational value of the area is underlined by the presence of both world cultural heritage (Bergpark Kassel) and world natural heritage (Kellerwald), while housing is relatively cheap compared with other large cities in Germany.

Our research group: Find out more about our research on our webpage (www.uni-kassel.de/go/femto). It also holds first visual impressions of our labs (www.uni-kassel.de/go/bilder).

Contact: Interested? Please send your complete application to baumert@physik.uni-kassel.de
Please do not hesitate to contact us by phone.