
Post-doc position at the Institute of Physics (University of Rennes 1)

Ultrafast Optical and X-ray investigation of Transition Metal Compounds

Application deadline not before **January 15th 2020** and until a suitable candidate is found

~ 2 000 € to 3 000 € / month (net salary depending on experience)

What we offer: We have a fully funded **up to four years** postdoc position in our group to work on ultrafast photoinduced phenomena in transition metal compounds, using UV-VIS optical spectroscopy (inhouse, Rennes) and X-ray scattering and spectroscopy (Free Electron Laser). Close collaboration with theory will be integral part of the project. The postdoc position is financed by the ANR (National Research Agency).

The project aims at understanding the photophysics of transition metals to a new level of detail thanks to a joint experimental and theoretical research program involving three laboratories and two countries (IPR in Rennes, ICR in Marseille, SwissFEL in Villigen). Ultrafast optical spectroscopy and X-ray techniques will be pushed to time resolutions approaching 10 fs. Quantum models will be used to solve time dependent Schrodinger equation to follow the photoinduced wavepacket motion and dispersion along different excited state trajectories. The latter will be experimentally controlled by wavelength tunable femtosecond laser pulses.

What we look for: The ideal candidate should have a PhD degree and a solid hands-on experience with ultrafast techniques (pump-probe, femtosecond lasers, OPAs). Previous experience in XFEL or synchrotron experiments is a plus. Skills in data analysis are mandatory. Good oral and written communication in English, as well as aptitude for teamwork are essential. The candidate will closely collaborate with an international team of experimental and theoretical researchers.

Job tasks: The successful candidate will:

- help to operate and develop the inhouse femtosecond optical spectroscopy setup.
- Perform diagnostics of excitation pulses
- Perform, analyze and interpret inhouse experiments
- Take an active role in experiments at FEL and synchrotron facilities
- Analyze FEL data (X-ray diffraction, absorption, emission)
- Write scientific articles and disseminate the results at conferences

Salary and employment conditions: The contracts include full social security coverage, retirement contributions and give right to unemployment benefits. Post-doc have no teaching

obligations. Rennes is a medium size French city less 1.5 hour train ride from Paris, offering a relaxing lifestyle with many cultural and sport activities.

Who we are: The “Materials and Light Group” is a research group based at the Institute of Physics of the University of Rennes 1 and CNRS. We focus our research on the out of equilibrium phenomena in molecules and materials by using optical and X-ray techniques with femtosecond resolution. <https://ipr.univ-rennes1.fr/en/materials-and-light-departement>

Recent selected papers from the group:

- Harmand et al, Nature Photonics 2013
- Cammarata et al, Phys Rev Lett 2014
- Levantino et al, Nature Communications 2015
- R. Bertoni, Nature Materials 2016
- Lemke et al, Nature Communications 2017
- Zerdane et al, Chemical Science 2017
- Chergui and Collet, Chemical reviews 2017
- S. Zerdane, J. Chem. Phys 2019

(More papers can be found on our website)

How to apply: Interested candidates should send a single pdf file with:

1. a cover letter
2. CV
3. main publication list with few sentences explaining the author contribution in each of them
4. The name of two to four referees

Interested candidates should contact:

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