

Jeremie RICHARD

Engineer Specialized in Optical Sciences

*PhD in Experimental Atomic,
Molecular and Optical (AMO) Physics*

Post-Doctoral Experience

Since 2016 **Design of mobile and cost-effective optical devices for fertility probing**, *University of California at Los Angeles (UCLA)*, USA, *Supervisor: Aydogan Ozcan*. HHMI project mentor.

Skills: microscopy, holography, bio-engineering, image processing, sensors.

Education

2012 – 2015 **PhD Thesis in Experimental AMO Physics**

Laboratoire Charles Fabry (Institut d'Optique - France)

Supervisors: Vincent Josse & Alain Aspect

Propagation of Ultracold Atoms in Optical Disorder

- *Theoretical Skills: Bose-Einstein condensation, laser cooling and trapping, wave propagation in disorder (diffusion and localization) and quantum optics.*

- *Experimental Skills: Geometrical, Gaussian and fiber optics, high-power and extended cavity diode lasers, near and far-field imaging, laser amplification, ultra-high vacuum, mechanics, electronics, data processing.*

- *Miscellaneous Skills: Oral and written scientific communication and teamwork.*

2011–2012 **Master's Degree in Physics**, *Institut d'Optique - Université Paris Saclay*, Palaiseau (France), "*Nanosciences: Nanophysics*".

Principal courses: Nanophotonics, spintronics, light-matter interaction, statistical physics, nanosystem modeling and clean room lab-works.

Internship: Laboratoire Charles Fabry (prior to my PhD Thesis).

2009–2012 **Graduate School of Engineering**, *Institut d'Optique*, Palaiseau (France), *specialized in optical sciences.*

Principal courses: Experimental optical lab-works, geometrical and wave optics (laser, diffraction, polarisation, guided waves, optical aberration), quantum mechanics, data analysis, electronics and programming.

Teaching Experience

2012–2015 **Tutorial Sessions**, *Institut d'Optique.*

Photometry, optical detection and signal processing to Master's Degree students (40h).

Lab-works, *Institut d'Optique.*

Electronics, micro-processing and signal processing to Master's Degree students (140h).

Professional Experience

- 2016 **Scientific Consultant**, Innovative Automotive Startup, Los Angeles.
Consultant for the design of an innovative optical display in automotive field.
- June – **Intern at EADS**, *Innovation Works*, Munich (Germany).
- August 2011 Worked in the field of spectroscopy, on the design of an optical sensor used for hydraulic fluid in-situ probing.

Publications

- 2016 **J. Richard**, V. Denechaud, V. V. Volchkov, L. K. Lim, M. Musawwadah, P. Bouyer, A. Aspect, L. Sanchez-Palencia and V. Josse, *Diffusion in Weak and Strong Disorder: Elastic Scattering Time Measurement Resolved in Momentum and Disorder Amplitude*, (in preparation).
- 2015 K. Müller, **J. Richard**, V. V. Volchkov, V. Denechaud, P. Bouyer, A. Aspect, and V. Josse, *Suppression and Revival of Weak Localization through Control of Time-Reversal Symmetry*, Phys. Rev. Lett. **114**, 205301 (2015).
- 2012 F. Jendrzejewski, K. Müller, **J. Richard**, A. Date, T. Plisson, P. Bouyer, A. Aspect, and V. Josse, *Coherent Backscattering of Ultracold Atoms*, Phys. Rev. Lett. **109**, 195302 (2012).

Oral Communication

- 2015 - *Photonics-Polaritonics: Transport in Complex Media*, Bad-Honnef (Germany).
- *PhD Students Lectures*, Palaiseau (France).
- 2014 - *Summer School: Waves and Disorder*, Cargèse (France).
- *Ultracold Atoms PhD Students Days*, Paris (France).
- *PhD Scientific Days*, Palaiseau (France). **Best talk award.**
- 2013 - *Young Atom Opticians Conference*, Birmingham (England).
- 2012 - *Ultracold Atoms PhD Students Days*, Palaiseau (France).

Computer Skills

- Advanced MatLab, L^AT_EX, Windows, Office, Adobe Illustrator
- Intermediate C, LabView, Mathematica, Maple
- Basic Linux, Fortran, VHDL, Origin, OSLO

Languages

- French Native speaker
- English Proficient
- German Advanced

Personal Interests

Music composition, guitar, soccer