

**DEROUARD Jacques**

Born: June 19, 1953 in Laval (Mayenne, France)

**Professionnal address**

Lab. of Interdisciplinary Physics , « LIPhy » (UMR CNRS 5588)

Université Joseph Fourier (Grenoble I)

BP 87 38402 Saint Martin d'Hères cedex

tel: xx33 (0)4 76 53 58 01 email: { LIENHYPERTEXTE "mailto:Jacques.Derouard@ujf-grenoble.fr" }

**Education:**

Graduated from Ecole Normale Supérieure and University Paris VI, 1974

« Agregation de Physique » , 1976

"DEA" and "these de 3eme cycle" (MSc) in Theoretical, Atomic and Statistical Physics, Universities of Paris VI and Grenoble I, 1976

"Doctorat d'Etat es Sciences", Grenoble I 1983 (thesis supervisor: Pr Pebay-Peyroula)

**Career:**

1976--1982: CNRS, Lab. Spectrometrie Physique Grenoble , Attache de Recherches

1980--1981: Military Service

1982--1990: CNRS, Lab Spectrometrie Physique Grenoble, Charge de Recherches

1990--2014: University Joseph Fourier-Grenoble I, Professor (optics, atomic and molecular physics)

2015-present : University of Grenoble-Alpes : emeritus professor (optics, atomic and molecular physics)

**Distinctions:**

CNRS bronze medal in the field of Atomic and Molecular Physics, 1983

Junior Member of the "Institut Universitaire de France", 1993—1998

Chevalier de l'ordre des Palmes Academiques, 2014

**Summary of research activities:**

All my past and present research activities have in common the utilization of optical spectroscopic methods to the study of various physico-chemical (and now biological) processes.

1976-1980: High resolution spectroscopy and physics of the Helium atom in high magnetic field

1980-1988: Study of molecular energy and angular momentum transfer processes by collisions in gas phase. Laser spectroscopy of alkali diatoms

1986-1997: Study of the physics and chemistry of ionized gases, optical and electrical diagnostics, discharge physics and plasma processing

1997-2002 : Starting of a new research field in Grenoble: Application of optical methods to the investigation of the brain, collaboration between the Lab. Spectrometrie Physique and a Biomedical NMR research laboratory (Lab. RMN Bioclinique): Study of the propagation of photons in turbid media and applications to the optical characterization of tissues in vivo. Utilization of optical pumping methods to enhance the nuclear magnetization of rare gases for NMR applications.

2002-now: Methodological developments on fluorescence correlation spectroscopy for biological applications. Optical engineering for life sciences (with CEA-LETI) : manipulation of manipulation of particles using radiative forces, optics of turbid media and diffuse optical tomography

**Administration :**

1986-1991 : Elected member, National Committee of CNRS

1996-1999 : Coordination of research in Physics at the University Joseph Fourier

2002-2006 : Director of the Grenoble Graduate School of Physics

2007-2011 : Deputy Director of the Laboratory of Interdisciplinary Physics, « LIPhy » (formerly LSP)

2011-june2014 : Director of the Laboratory of Interdisciplinary Physics,

### Some recent publications :

- Gaugiran S., Gétin S., Fedeli J. M., Colas G., Fuchs A., Chatelain F. and Derouard J., – Optical manipulation of microparticles and cells on silicon nitride waveguides – *Opt. Exp.*, 2005, 13, 6956
- Jaffiol R., Blanquaert Y., Delon A. and Derouard J. – Spatial fluorescence cross-correlation spectroscopy– *Appl. Opt.*, 2006, 45, 1225-1235.
- Delon A., Usson Y., Derouard J., Biben T. and Souchier C. – Continuous photobleaching in vesicles and living cells: a measure of diffusion and compartmentation. – *Biophys. J.*, 2006, 90, 2548-2562
- Delon A., Derouard J., G. Delapierre and Jaffiol R. – Measurement of surface concentration of fluorophores using fluorescence fluctuation spectroscopy – *Opt. Lett.*, 2006, 31, 1142-1144
- Gaugiran S., Gétin S., Fedeli J. M. and Derouard J., – Polarization and particle size dependence of radiative forces on small metallic particles in evanescent optical fields. Evidences for either repulsive or attractive gradient forces – *Opt. Exp.*, 2007, 15, 8146-8156
- Delon A., Wang I., Lambert E., Mache S., Mache R., Derouard J., Motto-Ros V., and Galland R. Measuring, in Solution, Multiple-Fluorophore Labeling by Combining Fluorescence Correlation Spectroscopy and Photobleaching – *J. Phys. Chem.*, 2010, B114, 2988-2996
- R. Galland, J. Gao, M. Kloster, G. Herbomel, O. Destaing, M. Balland, C. Souchier, Y. Usson, J. Derouard, I. Wang and A. Delon: Multi-confocal fluorescence correlation spectroscopy: experimental demonstration and potential applications for living cell measurements, *Front. Biosci.* 2011, **3**, 476-488
- Leroux C.E., Wang, I., Derouard J. and Delon, A. Adaptative optics for fluorescence correlation spectroscopy – *Opt. Exp.*, 2011, 19, 26839-26849
- Kloster-Landsberg M., Herbomel G., Wang I., Derouard, J., Vourc'h C., Usson Y., Souchier C., and Delon A. Cellular Response to Heat Shock Studied by Multiconfocal Fluorescence Correlation Spectroscopy, *Biophys. J.*, 2012, **103**, 1110
- Puszka A., Herve L., Planat-Chretien A., Koenig A., Derouard J., Dinten, J.M. Time-domain reflectance diffuse optical tomography with Mellin-Laplace transform for experimental detection and depth localization of a single absorbing inclusion, *Biomed. Opt. Exp.* 2013, **4**, 569