

Dr. HDR. Géraldine DANTELLE - LE SCORNET

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## RESEARCH ACTIVITIES

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### Since 2015 CHARGÉE DE RECHERCHE au CNRS – Institut Néel, Grenoble

#### Research projects:

- Synthesis of Ln<sup>3+</sup>-doped nanoparticles by soft chemistry routes (Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>, Gd<sub>3</sub>Sc<sub>2</sub>Al<sub>3</sub>O<sub>12</sub>, α-La(IO<sub>3</sub>)<sub>3</sub>, YBO<sub>3</sub>)
- Development of original solvothermal synthesis methods (high pressure, microwave heating)
- Study of the optical properties in powder or on colloidal solutions

**Applications:** Bio-imaging, Nanothermometry, LED lighting

### 2009 –2014 CHARGÉE DE RECHERCHE au CNRS – Lab. de Physique de la Matière Condensée, Palaiseau

#### Research projects:

- Synthesis of Ln<sup>3+</sup>-doped nanoparticles by soft chemistry routes (YVO<sub>4</sub>, LaPO<sub>4</sub>)
- Development of thin film deposition methods: spray-deposition, dip-coating on optical fibers
- Control of light propagation in thin films: guiding, scattering, extraction

**Applications:** Bio-imaging, lighting

### 2008 –2009 POST-DOCTORAL RESEARCH, ENS Paris-Saclay

**Research project:** NV centres in nanodiamonds for magnetometry and biology

### 2006-2008 POST-DOCTORAL RESEARCH, UNIVERSITY OF OXFORD, UK

**Research project:** Luminescent endohedral fullerenes for quantum information processing

## EDUCATION

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### 2003-2006 PhD in Materials Science, IRCP, Univ. P. et M. CURIE, PARIS

**Research project:** Nanostructured glass-ceramics for optical amplification

### 2002-2003 Master in Materials Science, Univ. P. et M. CURIE, PARIS

### 2000-2003 Master in Chemistry from the Ecole Nationale Supérieure de Chimie de Paris (ENSCP)

## SCIENTIFIC PRODUCTION

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- **Publications:** 64 papers published in peer-review international journals + 10 proceedings + 1 book chapter
- ***h*-factor:** 23 (November 2020)
- **Communications:** 81 oral presentations (13 invited) + 21 posters in national and international conferences
- **Seminars:** 13
- **Actions in popular media:** 10 (video, articles, conference, interview)

## AWARDS

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- **ENSCP Dufour award**, 2016
- **CNRS bronze medal**, 2014
- **Best poster award** at the HBSM conference, Australia, 2009
- **Best oral communication award** at the E-MRS, France, 2005

## SELECTED PUBLICATIONS

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- [ 1 ] Autofluorescence-free *in vivo* imaging using polymer-stabilized Nd<sup>3+</sup>-doped YAG nanocrystals, A. Cantarano, J. Yao, M. Matulionyte, J. Lifante, A. Benayas, D. Ortgies, F. Vetrone, A. Ibanez, C. Gérardin, D. Jaque, G. Dantelle, *ACS Applied Materials & Interfaces* 12(46) (2020) 51273-51284
- [ 2 ] Twofold advantage of gas bubbling for the advanced solvothermal preparation of efficient YAG:Ce nanophosphors A. Cantarano, D. Testemale, S. Sousa Nobre, A. Potdevin, R. Bruyère, A. Barbara, J.-L. Hazemann, A. Ibanez, G. Dantelle, *J. Mat. Chem. C* 8 (2020) 9382-9390
- [ 3 ] Evidence of reaction intermediates in microwave-assisted synthesis of SHG-active  $\alpha$ -La(IO<sub>3</sub>)<sub>3</sub> S. Regny, Y. Suffren, O. Leynaud, I. Gautier-Luneau, G. Dantelle, *Crystal Eng. Comm.* 22 (2020) 2517-2525
- [ 4 ] Nd<sup>3+</sup>-doped Gd<sub>3</sub>Sc<sub>2</sub>Al<sub>3</sub>O<sub>12</sub> nanocrystals: towards efficient nanoprobe for temperature sensing, G. Dantelle, M. Matulionyte, D. Testemale, A. Cantarano, A. Ibanez, F. Vetrone, *Phys. Chem. Chem. Phys.* 21 (2019) 11132-11141
- [ 5 ] Microwave synthesis and up-conversion properties of SHG-active  $\alpha$ -(La,Er)(IO<sub>3</sub>)<sub>3</sub> nanocrystals, S. Regny, J. Riporto, Y. Mugnier, R. Le Dantec, S. Kodjikian, S. Pairis, I. Gautier-Luneau, [G. Dantelle\\*](#), *Inorg. Chem.* 58(2) (2019) 1647-1654
- [ 6 ] A new solvothermal method for the synthesis of size-controlled YAG:Ce single-nanocrystals G. Dantelle, D. Testemale, E. Homeyer, A. Cantarano, S. Kodjikian, C. Dujardin, J.L. Hazemann, A. Ibanez, *RSC Advances* 8 (2018) 26857-26870
- [ 7 ] A strategy to increase phosphor brightness: Application with Ce<sup>3+</sup>-doped Gd<sub>3</sub>Sc<sub>2</sub>Al<sub>3</sub>O<sub>12</sub>, L. Devys, G. Dantelle, G. Laurita, E. Homeyer, I. Gautier-Luneau, C. Dujardin, R. Seshadri, T. Gacoin, *Journal of Luminescence*, 190 (2017) 62-68
- [ 8 ] Nanoparticulate coatings with efficient up-conversion properties G. Dantelle, R. Calderon, C. Zaldo, C. Cascales, T. Gacoin, *ACS Applied Materials and Interfaces* 6(24) (2014) 22483-22489
- [ 9 ] How to prepare the brightest luminescent coatings? G. Dantelle, B. Fleury, J.P. Boilot, T. Gacoin, *ACS Applied Materials and Interfaces* 5(21) (2013) 11315-11320
- [ 10 ] The local environment of the activator ions in the solid state lighting Y<sub>3-x</sub>Ce<sub>x</sub>Al<sub>5</sub>O<sub>12</sub> N. George, A.J. Pell, G. Dantelle, K. Page, A. Llobet, M. Balasubramanian, G. Pintacuda, B. F. Chmelka, R. Seshadri, *Chem. Mat.* 25(20) (2013) 3979-3995