



# François THIERRY

MEng - MSc - PhD

1 impasse Antoine Watteau  
45650 Saint Jean le Blanc, France  
☎ +33 (0)6 75 49 39 28  
✉ francois.thierry90@gmail.com  
📄 francois-thierry.github.io  
26 Years Old, Single

**Keywords** : materials, nanosciences, optoelectronics, modelisation, optimization

## Doctoral Thesis

2012–2015 **Title** : *Study of Semiconductor Nanoparticules Properties for Hybrid Solar Cells*

**Description** **Governmental Grant with Teaching Position** at the Materials, Microelectronics and Nanosciences Institute of Provence (IM2NP - MARSEILLE, France) within the Optoelectronics and Photovoltaics (OPTOPV) Team. Key points of this work include :

- Calculations of the physical properties of quantum structures
- Experimental characterizations of nanoparticles incorporated in thin-films
- Participation on various computational optoelectronics related works

## Work Experience

### Research Internship - 6 months

January 2013 **Leopold-Franzens University, INNSBRÜCK (Austria)**, photonics team.

July 2013 **Study of the foundations of quantum mechanics with single photon sources**

- Test of Born's law with three then five slits quantum experiments
- Use of two sources : manufacture of an optical heralded single-photon source (with a non-linear cristal) and use of the emission from an isolated quantum dot

### R&D Internship - 6 months

August 2010 **Fraunhofer IPM, KAISERSLAUTERN (Germany)**, terahertz measurement and systems team.

Feb. 2011 **Characterization and optimization of a novel all electronic terahertz system**

- Use and optimization of the new non-destructive THz imaging system
- Development of an hyperspectral image processing software (Matlab)

### R&D Internship - 3 months

April 2009 **LERM, ARLES (France)**, materials study and research laboratory.

July 2009 **Study of durability indicators in concrete and implementation of a new test method based on water permeability**

- Characterizations and durability studies of numerous samples
- Use and characterization of the new test method

## Education

2011–2012 **Master of Sciences**, in *Mechanics and Physics with a specialty in Optics and Nanotechnologies (ONT)*, UNIVERSITY OF TECHNOLOGY OF TROYES (UTT).

2009–2012 **Master of Engineering**, in *Materials, Technology and Economy (MTE) with a specialty in Transformation and Quality of Materials (TQM)*, UNIVERSITY OF TECHNOLOGY OF TROYES (UTT).

2007–2009 **DUT (technical degree)**, in *Materials Science*, FRANÇOIS RABELAIS UNIVERSITY, IUT of Blois.

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## Publications

Articles are available to download on **ResearchGate** and **GitHub**

- 2016 - J. Le Rouzo, D. Duché, C. Ruiz-Herrero, **F. Thierry**, M. Carlberg, G. Berginc, M. Pasquinelli, J.-J. Simon, L. Escoubas, and F. Flory, "Specific tools for studying the optical response of heterogeneous thin film layers", Journal of Nanophotonics - submitted
- J. Le Rouzo, D. Duché, C.M. Ruiz, **F. Thierry**, M. Carlberg, G. Berginc, M. Pasquinelli, J.J. Simon, L. Escoubas and F. Flory, "Characterization and modeling tools for light management in heterogeneous thin film layers", Proceedings of SPIE - The International Society for Optical Engineering 99290I [link]
- 2015 - **F. Thierry**, J. Le Rouzo, F. Flory, G. Berginc and L. Escoubas, "Fast and reliable approach to calculate energy levels in semiconductor nanostructures", Journal of Nanophotonics, 9(1), 093080. [link]
- 2014 - A. Bou, P. Torchio, D. Barakel, **F. Thierry**, A. Sangar, P-Y. Thoulon and M. Ricci, "Indium tin oxide-free transparent and conductive electrode based on SnOx | Ag | SnOx for organic solar cells", Journal of Applied Physics, 116, 023105 [link]
- **F. Thierry**, J. Le Rouzo, F. Flory, G. Berginc and L. Escoubas, "Optimization of the optical properties of nanostructures through fast numerical approaches", Proceedings of SPIE - The International Society for Optical Engineering 916102 [link]
- A. Bou, P. Torchio, D. Barakel, **F. Thierry**, P-Y. Thoulon and M. Ricci, "Numerical and experimental study of SnOx | Ag | SnOx multilayer as indium-free transparent electrode for organic solar cells", Proceedings of SPIE - The International Society for Optical Engineering 898706 [link]

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## Awards and Distinctions

- 2014 - Newport Research Excellence Award - SPIE Optics + Photonics, San Diego, USA
- Best Poster Award - Journées de l'IM2NP, Cassis, France

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## Computer Skills

Programming **Python**, C/C++, HTML/Javascript, Matlab  
Office Soft. **LaTeX**, Microsoft Office, Reveal.js  
Graph./CAO **Inkscape**, Gimp, Photoshop / Autodesk Inventor

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## Languages

French Mother tongue  
**English** Fluent  
**German** Fluent  
Espagnol Notions  
Italian Notions