

Nathalie Picqué

Curriculum Vitae

Personal and Professional Information

Personal	Picqué Nathalie, Brigitte, Anne. Born on 2. December 1973 at L'Haÿ-les-Roses (France) French citizen
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Professional Experience

- 2011-present:** **Leader of a research group at the Max Planck Institut für Quantenoptik, Garching, and the Ludwig Maximilian University of Munich, Germany** in the Laser Spectroscopy Division of Professor T.W. Hänsch.
- 2008-2011:** Part-time visiting scientist at the Max Planck Institute of Quantum Optics, Germany
- 2001-present:** **Permanent research scientist** with the Centre National de la Recherche Scientifique (CNRS). Currently on leave.
Head of the Laser Spectroscopy research group (4 permanent scientists, plus students and post-docs) from 2006 until 2012.
Until 2011, research at the Institut des Sciences Moléculaires d'Orsay (formerly Laboratoire de Photophysique Moléculaires), France.
- 1999-2000** **Post-doctoral Marie-Curie fellow** at European Laboratory for Nonlinear Spectroscopy (LENS), Florence, Italy in the group of Prof. M. Inguscio.

Education

- 2006** **Habilitation degree in Physical Sciences** (accreditation to supervise research, highest academic qualification a scholar can achieve by his own pursuit in France). Université Paris-Sud, Orsay, France.
Defended in 12/10/2006. Not marked in France.
- 1998** **Doctoral degree in Physics**, Université Paris-Sud, Orsay, France.
Defended on 18/12/1998, with the highest distinctions.
Advisor: Dr. Guy Guelachvili.
- 1996** **Master degree** (Diplôme d'Etudes Approfondies) **in Physics**. Rank:1, with high distinctions. Majors: Laser physics, quantum mechanics and nonlinear optics. Ecole Polytechnique and Université Pierre et Marie Curie, France.

Publications

- 71 published articles in peer-reviewed journals.
- 2 patents.
- 3 books.
- 83 peer-reviewed conference proceedings and peer-reviewed technical digests.

Communications to conferences

- 88 invited talks at international and national conferences (including 4 plenary talks and 3 keynote talks).
- 29 invited seminars.
- over 200 contributed talks or posters at international and national conferences.

Supervision of young scientists

- Research advisor for fifteen doctoral students. Twelve have successfully obtained their degree; three are currently working on their thesis.
- Research advisor for eighteen postdoctoral fellows and ten long-term visiting senior scholars (stay>3 months).
- Research advisor for fourteen master students.

Of a total of 26 former post-docs and doctoral students, 17 (65%) hold a tenured position in academia or in a government research institution, 2 have temporary positions in other research groups, 4 have a R&D position in the industry, 3 have a sales/management position in the industry.

Prizes, awards

- 2019** **Fellow** (Optical Society of America)
2013 **Coblentz Award** (Coblentz Society, USA).
2010 **Beller Lectureship Award** (American Physical Society).
2010 Amongst the 5 nominees of the “**Femmes en Or**” trophy, category research.
2009 **CNRS Excellence Award**.
2008 **Jean Jerphagnon Prize** (awarded by Académie des Technologies, Alcatel-Lucent, CNRS, France-Telecom, Pôle Images et Réseaux, Opticsvalley, Société de l'Electricité, de l'Electronique et des Technologies de l'Information et de la Communication, Société Française d'Optique, Société Française de Physique, Pôle Systématique Paris-Région, Thales).
2008 **Innovation Prize**, Université Paris-Sud.
2007 **Bronze medal of CNRS** (best young (<40) scientist of the year in the field “Optics and Lasers, Atomic and Molecular Physics, Hot Plasmas” in France).
1999 **Individual Marie-Curie post-doctoral fellowship**.
1998 **Rao Prize** for the best student talk at the 1998 International Symposium on Molecular Spectroscopy (Columbus, USA).

Scientific Interests

Laser frequency combs
 Molecular spectroscopy
 Precision molecular spectroscopy
 Ultrafast optics
 Molecular imaging and microscopy

Grants

More than 9.5 Meuros through research grants since 2003.

Principal investigator (or co-principal investigator) of research projects granted e.g. by:

- European Community (Eureka/Eurostars program)
- Innovative Training Network (Marie Skłodowska-Curie Actions, EU)
- European Research Council
- French National Grant Agency
- Defense Advanced Research Projects Agency (USA)
- EADS Foundation
- Agilent Technologies Foundation (USA)
- Ile-de-France Region
- Université Paris-Sud

- CNRS
- Max Planck Society
- Munich Center for Advanced Photonics

Committees, boards and other academic services

Editorial board:

- 2016-present** Editorial board, Optica (Optical Society of America).
2016-present Editorial board, Applied Physics B (Springer).
2018 Guest Editor, special issue of Journal of Molecular Spectroscopy (Elsevier) on Frequency Comb Spectroscopy.
2016 Guest Editor, special issue of Applied Physics B for the 75th birthday of T.W. Hänsch.
2009- 2012 Editorial board, Journal of Molecular Spectroscopy (Elsevier).

Conference organization:

- 2018** Co-organizer of the mini-symposium “Frequency comb spectroscopy” at the 73rd meeting of the International Symposium on Molecular Spectroscopy, Urbana-Champaign, Illinois.
2017 Co-chair of the 2017 meeting on Optics and Photonics for Energy & the Environment of the Optical Society of America, Boulder, USA.
2016 Co-chair of the 2016 meeting on Fourier Transform Spectroscopy of the Optical Society of America, Leipzig, Germany.
2011- 2017 Program committee, Topical meeting on Fourier Transform Spectroscopy, Optical Society of America.

Prize committee:

- 2019-2021** Ellis L. Lippincott Award committee, Optical Society.
2015-2018 Coblentz Award committee, Coblentz Society.

Academic service:

- 2011- 2013** Academic senate, Paris-Saclay University (France).
2006-2012 Member of the board of directors of Institut des Sciences Moléculaires d’Orsay.
2006-2011 Member of the appointment committees of assistant professors in AMO physics at Université Paris-Sud Orsay, at Université Pierre et Marie Curie Paris, and at Université de Reims, France. Several positions examined per year.
2004-2012 Elected, then nominated, member of the laboratory council of Institut des Sciences Moléculaires d’Orsay.

Referee:

- 2001-present** Referee for grant agencies (European Research Council, National Science Foundation-USA, French National Grant agency, Israel Science Foundation, Swiss National Foundation,

2000-present European Commission FET open program, Research Grant Council of Hong Kong). Currently about 3 reports per year.
Referee for Nature, Science, Nature Photonics, Nature Physics, Nature Chemistry, Science Advances, Nature Communications, and other peer-reviewed journals. Currently about 30 reports per year.

Selection of 5 publications

1. N. Picqué, T.W. Hänsch, Single-photon interferometry and spectroscopy with two laser frequency combs, submitted for publication, arXiv:1906.03706 (2019).
2. G. Millot, S. Pitois, M. Yan, T. Hovannysyan, A. Bendahmane, T.W. Hänsch, N. Picqué, Frequency-agile dual-comb spectroscopy, *Nature Photonics* **10**, 27-30, (2016).
3. T. Ideguchi, S. Holzner, B. Bernhardt, G. Guelachvili, N. Picqué, T.W. Hänsch, Coherent Raman spectro-imaging with laser frequency combs, *Nature* **502**, 355-358 (2013).
4. B. Bernhardt, A. Ozawa, P. Jacquet, M. Jacquy, Y. Kobayashi, T. Udem, R. Holzwarth, G. Guelachvili, T.W. Hänsch, N. Picqué, Cavity-enhanced dual-comb spectroscopy, *Nature Photonics* **4**, 55-57 (2010).
5. J. Mandon, G. Guelachvili, N. Picqué, Fourier Transform Spectroscopy with a Laser Frequency Comb, *Nature Photonics* **3**, 99-102 (2009).