

Alexandra VAN-QUYNH
aquynh@cii.fc.ul.pt

Education

95-98: **Ph. D in Physics**, Laboratoire de Spectrométrie Physique, University of Grenoble (France).
"Nuclear Magnetic Relaxation study of the vortex phase of organic superconductors $\square\square\text{-(ET)}_2\text{CuX}$ "

1994: **Master of Science** "*Physics applied methods, NMR speciality*", Grenoble University (France).

Research Training in *Magnetic Resonance Imaging (MRI)* - INSERM - Grenoble Hospital – France.

Research Experience

2010-today : **Researcher**, Centro de Filosofia das Ciências, Lisbon University (Portugal)

03-09: **Research Physicist**, Centro de Fisica da Materia Condensada, Lisbon University (Portugal).

01-03: **Manager in charge of the R&D** for a start-up biotechnology company, Limoges (France).

00-01: **Research Physicist**, Condensed Matter Physics Department - École Polytechnique (Paris).

99-00: **Research Physicist**, Department of Chemistry - University of Virginia, Charlottesville (USA).

98-99: **Research Physicist**, Lab. Physique des Matériaux Synthétiques, CNRS – Grenoble University (France).

Additional Education

2007: **Neuro-Linguistic Programming (NLP)** – School of Christian Flèche - Aix-en-Provence (France).

2006-2010: **Course in Bio-psychology** - School of Christian Flèche- Aix-en-Provence (France).

Participation in recent academic projects

- European Network "*Supramolecular liquid crystal dendrimers*", (2003-2006).
- FCT research project "*Molecular structure and dynamics on the origin of biaxial nematic phase*", (2006-2009).
- FCT research project "*Henri Poincaré: philosopher of science*", (2008-2010).

Skills and achievements

- Nuclear Magnetic Resonance - Solid state physics (superconductors)
- Physics of complex systems (polymers, proteins, liquid crystals, porous media) - Hydrodynamic theory
- Philosophy of mathematics

- *Interview of explication*: insight in first person experiences, school of Pierre Vermersch, Paris (France)

Languages

English: fluent

German and Russian: written, competent

Portuguese: competent

International contacts

- **Prof. Robert G. Bryant**, rgb4g@virginia.edu
Department of Chemistry, Department, University of Virginia – Charlottesville (USA)
- **Prof. Jean-Noël Capdevielle**, capdev@apc.univ-paris7.fr
Astroparticle and Cosmology Department – Collège de France - Paris (France)
- **Pierre Vermersch**, p.vermersch@gmail.com
Groupe de Recherche en Explication (GREX) – Saint-Eble (France)
- **Michel Bitbol**, michel.bitbol@polytechnique.edu
Centre de Recherche en Epistémologie Appliquée (CREA), Ecole Polytechnique/CNRS, Paris (France).
- **Christian Flèche**, flechechristian@wanadoo.fr
École de Biodécodage, Aix-en-Provence (France)

Teaching experience

2001-today: **Member of jury in Physics** – Concours communs polytechniques et Grandes Écoles

2000: **Lecturer in Physics** - École Supérieure de Physique Chimie Industrielles de Paris (France).

95-99: **Lecturer in Physics** – Grenoble Faculty of Sciences (France).

Scientific vulgarisation interest

Organizer of conferences at the Institut Franco-Portugais of Lisbon: *Bar des Sciences*.

- “*The story of Fermat’s theorem*”, collaboration with the Portuguese Society of Mathematics.
- “*How religion is challenged by scientific research?*” collaboration with the Lisbon Faculty of Theology (2008).
- “*Rhythm and virtuosity in music*”, collaboration with the Music Department of the University of Évora (2008).
- “*Could we travel in Time?*”, invited speaker: Etienne KLEIN from the École Centrale de Paris (2009).
- “*Mathematics and Democracy*”, collaboration with the Portuguese Catholic University, Lisbon (2010).
- “*In the shoes of Albert Einstein*”, collaboration with the Instituto Superior Tecnico of Lisbon (2010).
- “*Contribution to a Cogito geometry*”, collaboration with the New University of Lisbon (2011).
- “*Chaos and fractals: a fraternity emanating from order*”, collaboration with the University Paul Sabatier – Toulouse (France) (2011).

Chairman and organizer of the conference “*Variations on an unknown theme: Science and Music*” – Lisbon – September 2009.

Publications

Book

G. Ambert, M. Chabanol, Y. Poujet et **A. Van-Quynh**,
"Système D – Physique 1^{ère} année Classes Préparatoires - MPSI, PCSI, PTSI ", **Dunod** Editor (2002).

Relevant publications in international journals

- **A. Van-Quynh**, C. Berthier, H. Mayaffre, P. Ségransan, and P. Batail,
"NMR evidence for a metastable vortex arrangement in the 2D organic Superconductor $\square$ -(BEDT-TTF) $_2$ Cu(NCS) $_2$ ", Phys. Rev. B. **59**, 12064 (1999).
- **A. Van-Quynh**, H. Mayaffre, P. Ségransan, and P. Batail,
" ^1H NMR measurement of the Magnetic Field Penetration Depth $\square_{ab}$ in the Organic Superconductor $\square$ -(BEDT-TTF) $_2$ Cu(N(CN) $_2$)Br", Synt. Met. **103**, 1985 (1999).
- B. Pépin-Donat, **A. Van-Quynh**, and A. Viallat,
"Mechanisms of deformation in fully-conjugated conducting gels. Stretching and swelling", Macromol. **33**, 5912 (2000).
- J.-P. Korb, **A. Van-Quynh**, and R. G. Bryant,
"Proton spin-relaxation induced by localized spin-dynamical coupling in proteins", Chem. Phys. Lett. **339**, 77 (2001).
- J.-P. Korb, **A. Van-Quynh**, and R. G. Bryant,
"Proton spin-relaxation induced by localized spin-dynamical coupling in proteins and other imperfectly packed solids", MRS Proceedings, **651** (2000).
- P. Levitz, J.-P. Korb, **A. Van-Quynh**, and R. G. Bryant,
"Probing dynamics of water molecules in mesoscopic disordered media by NMR dispersion and 3D simulations in reconstructed confined geometries", MRS Proceedings, **651** (2000).
- **A. Van-Quynh**, S. Willson, and R. G. Bryant,
"Protein reorientation and bound water molecules measured by ^1H magnetic spin-lattice relaxation ", Biophysical Journal **84**, 558 (2003).
- K. Victor, **A. Van-Quynh**, R.G. Bryant,
"High-resolution magnetic relaxation dispersion measurements used to characterize protein dynamics", Biophysical Journal, **88**, 443 (2005).
- **A. Van-Quynh**, P. Blanchart, S. Battu, D. Clédât, and Ph. Cardot,
"Analytical scale purification of zirconia colloidal suspension using field programmed sedimentation field flow fractionation", Journal of Chromatography A, **1108**, 90 (2006).
- **A. Van-Quynh**, D. Filip, C. Cruz, P. J. Sebastião, J.-M. Rueff, M. Marcos, and J. L. Serrano,
"NMR relaxation study of molecular dynamics in columnar and smectic phases of a PAMAM liquid crystalline dendrimer", Eur. Phys. J. E, **18**, 149 (2005).
- **A. Van-Quynh**, D. Filip, C. Cruz, P. J. Sebastião, J.-M. Rueff, M. Marcos, and J. L. Serrano,
"NMR relaxation study of molecular dynamics in the smectic A phase of PAMAM liquid crystalline dendrimers of generation 1 and 3", Mol. Cryst. Liq. Cryst., **450**, 191 (2006).
- **A. Van-Quynh**, P. J. Sebastião, D. A. Wilson, and G. H. Mehl,

"Detecting columnar deformation in a supermesogenic octapode by NMR relaxometry ", Eur. Phys. J. E, **31**, 275 (2010).

• **A. Van-Quynh** organizer of the thematic dossier "*Introspection and intuition in mathematics*" in Kairos, **6**, (2013). Introduction of the dossier "*Where experience matters*" by **A. Van-Quynh**.

Relevant publications in national journals

• **A. Van-Quynh**,
"Expérience intuitive – Expérience dissociative", Expliciter, **93** pp. 30-36 (2012).