

## Patrick NAVARD

Born : 28 March 1953

### **Business address**

**CEMEF** : Centre de Mise en Forme des Matériaux / Center for Materials Forming  
MINES ParisTech - CNRS UMR 7635  
Rue Claude Daunesse – CS 10207  
06904 Sophia Antipolis cedex - France  
tel: 33-(0)4 93 95 74 66 (direct) / 33-(0)6 33 77 39 27  
e-mail: patrick.navard@mines-paristech.fr  
www.cemef.mines-paristech.fr

### PROFESSIONAL EXPERIENCE

- **Series Editor.** Springer “Biobased Polymers”. 2016-2021, 17 books published.  
<https://www.springer.com/series/15056>
- **Coordinator** of the European Polysaccharide Network of Excellence 2004-2019  
[www.epnoe.eu](http://www.epnoe.eu)
- **Deputy-director** of the CNRS / Ecole des Mines CEMEF joint research center 2004-2011
- **Director** of the CNRS / Ecole des Mines CEMEF joint research center 2001-2004

June 2019 to present: **Directeur de Recherche émérite au CNRS**

1989 to May 2019 : **Directeur de Recherche au CNRS**

1984 to 1989 : **Chargé de Recherche au CNRS**

Research areas: polysaccharides, biobased composites (polymers and concrete), polymer rheology, polymer processing, rheo-physics, polymer physics (blends, liquid crystals, solutions, suspensions, gels, light scattering).

1983-1984 **Post-doctoral Research Fellow.** IBM Research Center, San Jose, California

Research Supervisor : Prof. P.J. FLORY.

1980-1981 **Research Fellow.** Dept. of Physics. City of London Polytechnic. London

Research Supervisor : Dr. G.H. MEETEN

1981-1983 **Post-graduate Student.** Ecole des Mines de Paris, Sophia Antipolis

1978-1980 PhD Supervisor : Prof. J.M. HAUDIN

### ACADEMIC BACKGROUND

1983 **Thèse de Doctorat-ès-Sciences.** (INSA) de Lyon et Université de Lyon I.  
"Physical properties of cellulose and cellulose derivative mesophases"

1982 **Thèse de Docteur-Ingénieur** (équivalent to a PhD).  
"Study of cellulose / *N*-methyl morpholine *N*-oxide solutions".

- 1979 **DEA** (postgraduate degree) with a specialization in Mechanical Properties of Materials. Ecole des Mines de Paris.
- 1978 **DEA** with a specialization in Biology. Université de Lyon
- 1978 **Diplôme d'Ingénieur** in Physics and Materials Science. INSA de Lyon. Département de Génie Physique et Matériaux.

### **AWARDS**

- 2019 Fellow of the *Cellulose and Renewable Materials* division of the American Chemical Society
- 2011 Prime d'Excellence Scientifique of CNRS
- 1995 Groupe Français de Rhéologie National Award
- 1989 Groupe Français des Polymères (GFP) National Award

### **PROFESSIONAL SERVICES**

#### **Professional Journal Activities**

- Reviewer : Journal of Polymer Science, Macromolecules, Liquid Crystals, Journal of Rheology, Rheologica Acta, Molecular Crystal Liquid Crystals, Journal de Physique, Langmuir, Biomacromolecules, Cellulose, Carbohydrate Polymers, ...

#### **Organization of Conferences**

- 2019 EPNOE-ACS-Cellulose Japan Society conference. Aveiro, Portugal. Co-organizer.
- 2018 Matériaux 2018, Strasbourg. Member of Organization committee of the "Eco-conception et recyclage" symposium.
- 2018 Colloque Temps et Société, Nice. Moderator of a session.
- 2017 ACS national meeting, San-Francisco, USA. Co-organiser of an EPNOE-ACS session "Processing and properties of biobased composites and blends".
- 2017 EPNOE-ACS 2015 conference, Erfurt, Allemagne. President of the International Advisory Board.
- 2017 International Forest Biorefining Conference (IFBC), Thunder Bay, Ontario, Canada. Member of international scientific committee.
- 2017 IntLignCellMat 2017, Barcelone, Espagne. Member of scientific committee.
- 2017 Bamboost the International Conference on Bamboo Utilisation, Wageningen, Pays-Bas. Member of the Advisory Board.
- 2016 7th Workshop on Cellulose, Regenerated Cellulose and Cellulose Derivatives, Örnköldsvik, Suède. Member of scientific committee.
- 2016 ACS national meeting, San Diego, USA. Co-organiser of the EPNOE-ACS session "New Horizons in Sustainable Materials".
- 2016 XII French-Romanian polymer meeting, Nice. Co-organizer.
- 2015 Pre-conference course - First International Conference on Bio-based Building Materials, Clermont-Ferrand, France. Co-organizer.
- 2015 ACS national meeting, Denver. Co-organiser of an EPNOE-ACS session "Research on Renewable Materials: US & EU Perspectives".
- 2015 Pre-conference course - EPNOE-ACS 2015 conference, Warsaw, Poland. Co-organizer.
- 2015 EPNOE-ACS 2015 conference, Warsaw, Poland. President of the International Advisory Board.
- 2014 XI Colloque Franco-Roumain, Pitesti, Romania ; Co-organizer.

- 2014 International Conference on Bio-based Materials and Composites (ICBMC'14) Montréal, Canada. Co-organizer of a session.
- 2014 EU-Japan Cellulose Conference, Berlin, Germany. Co-organiser.
- 2014 naro.tech 2014, Erfurt, Germany. Member of scientific committee.
- 2014 The 6th Workshop on Cellulose, Regenerated Cellulose and Cellulose Derivatives, Karlstad, Sweden. Member of scientific committee.
- 2013 EPNOE 2013, Nice, France. Organizer.
- 2012 ACS meeting, San Diego. Co-organiser of a session.
- 2012 3<sup>rd</sup> International Cellulose Conference, Sapporo, Japan. Member of the Advisory Board
- 2012 PolyTech meeting-2012. Pune, India. Member of the Advisory Board.
- 2010 4th International IUPAC Conference on Polymer Behavior, Lodz. Member of the Scientific Committee.
- 2010 ACS meeting, San Francisco. Co-organiser of a session.
- 2009 Sixth Forestry Technology Platform conference (FTPC6). Member of the Program Committee
- 2009 Advanced Polysaccharide Based Materials Conference. Member of the Scientific Committee
- 2009 9<sup>ème</sup> Colloque Franco-Roumain, Timisoara. Member of the Organizing Committee.
- 2009 Polymer Processing Society meeting PPS-25, Goa, Inde. Co-organiser of a session.
- 2008 Multiphysics Approaches for the Behavior of Polymers and Polymer-based nanomaterials (ICPB3), Marrakech. Membre du comité d'organisation.
- 2008 Colloque du groupe Français des Polymères. Membre du comité scientifique 8<sup>ème</sup> Colloque Franco-Roumain, Grenoble. Member of the Organizing Committee
- 2006 Euromech Colloquium 487. International Advisory Board.
- 2005 40<sup>ème</sup> colloque du Groupe Français de Rhéologie. Member of the Organizing Committee.
- 2004 Macro2004, Thiruvananthapuram, India. International Advisory Board member.
- 2004 Third Kargin conference, Moscou. International Symposium « Structure sensitive Mechanics of Polymer Materials », Member of the Organizing Committee.
- 2003 Europe-Africa Meeting of the Polymer Processing Society, Athens (Greece), co-chairman of the « Structure Development during Processing » symposium.
- 2001 Seventeenth Annual Meeting of the Polymer Processing Society, Montréal, Canada, co-chairman of the « Experimental techniques and non destructive testing » symposium.
- 2001 SPIE ( The International Society for Optical Engineering), San Diego (USA), co-chairman of the « Raman Spectroscopy and light scattering technologies in materials science » symposium.
- 1999 Europhysics Conference (European Physical Society) and Euro Rheo Conference (European Society of Rheology) "Rheology, rheo-physics and flow-induced structures of liquid crystalline polymers, surfactants and block copolymers", Sophia Antipolis, co-chairman.
- 1997 Europhysics Conference "4th International Symposium on Thermoplastics Elastomers", Kolobrzeg, Poland, International Advisory Board member.
- 1995 Europhysics Conference "Application of Synchrotron Radiation in Polymer Science", Hamburg, International Advisory Board and Programme Committee.
- 1995 Colloque SAGE "Les Alliages de Polymères", Sophia-Antipolis. Member of the organization Committee.
- 1995 Second Séminaire Franco-Roumain sur les Polymères. L'Arbresle, chairman and co-organizer.

- 1994 Colloque "Les 20 ans du Cemef", Sophia-Antipolis, organizer.
- 1993 Premier Séminaire Franco-Roumain sur les Polymères. Jassy, Romania, co-chairman and co-organizer.
- 1991 International Course on Rheology, Rheo-optics and Processing of Liquid Crystalline Polymers. Sophia-Antipolis, organizer.
- 1990 Polymer Processing Society International Annual Meeting, Nice, program chairman.
- 1989 National Meeting on "Fibers and Polymer Matrices". AMAC - GFP. Sophia-Antipolis, chairman and organizer.

### **Committee Work :**

- Member of the CELL program advisory of American Chemical Society.
- Member of the scientific committee of BIA unit, INRA (Nantes)
- Member of the Executive Committee of the Virtual Institute for Bamboo fibre Expertise and Research (VIBER).
- French representative in COST 1205 « Innovative applications of regenerated wood cellulose fibres »
- Member of the European scientific committee of the Forest-Based Sector European Technology Platform (up to 2009).
- Member of the scientific committee of European Renewable Resource Material Association (up to 2010).
- Member of the scientific committee of pôle de compétitivité « Céréales Vallée » up to 2014.

- Member of the Editorial Board of "Les Presses de l'Ecole des Mines" (1997-2000)
- Member of the Editorial Committee of Cellulose Chemistry and Technology.
- Member of the Editorial Committee of Carbohydrate Polymers.

### **Scientific Societies**

- European Physical Society
- Member of the Macromolecular Board (1995-2000)
- European Society of Rheology
- Moderator of the ERS web site (2001-2002)

### **Other activities**

- Reviewer and panel member for Ademe, ANR and various foreign organizations (Italy, Austria, Finland).

## **ACADEMIC SUPERVISING**

### **PhD Dissertations**

- Y. Fu (2017) Ternary polymer blend, co-supervisor with E. Disdier
- R. de Melo (2015) Natural fiber composites (co-supervisor Maria Marques, university of Rio, Brazil)
- E. Privas (2013) Ligno-cellulosic materials “Elaboration and characterisation”
- N. Dos Santos (2013) Influence of chemical and enzymatic treatments on a variety of wood pulps on their dissolution in NaOH-water
- W Liu (2013) Cellulose solutions and hybrid/composite materials from ionic liquid and alkaline solvents (co-supervisor T. Budtova)
- M. Spinu (2010) Evaluation of physical and physico-chemical parameters which influence cellulose accessibility.
- C. Roux (2008) Dispersion of porous fillers in elastomers, (co-supervisor E. Disdier)
- I. Boudimbou (2008) Dispersion of silica in elastomers, (co-supervisor E. Disdier)

- E. Relot (2008) Modelling of dip-coating; (co-supervisor J. Bickard)
- N. LeMoigne (2008) Mechanisms of cellulose dissolution and swelling
- C. Cuissinat (2006) Swelling and dissolution mechanisms of native cellulose fibers
- M. Egal (2006) Cellulose physics ; (co-supervisor T. Budtova)
- K. Labastie (2003) Rheology of polyolefines; (co-supervisor B. Monasse)
- O. Biganska (2002) Cellulose solutions in methyl morpholine oxide
- C. Roy (2002) Cellulose solutions in sodium hydroxide, (co-supervisor T. Budtova)
- M. Astruc (2001) Flow-induced morphology of concentrated polymer blends, (co-supervisor E. Peuvrel-Disdier)
- A. Mititelu (2001) Nematic thermosetting resins; (co-supervisor B. Simionescu)
- J. Maugey (2000) Phase separation in thermosetting resin blends
- G. Bellet (1999) Optical properties of polyethylene films; (co-supervisor B. Monasse)
- O. Seyvet (1999) Flow-induced structure of silica filled polymers; (co-supervisor E. Peuvrel-Disdier)
- D. Rosati (1998) Flow-induced structures in block copolymers
- D. Rusu (1997) Rheology of polymer blends; (co-supervisor E. Peuvrel-Disdier)
- J.B. Riti (1996) Rheology and structures of liquid crystalline polymers
- V. Tsakalos (1995) Rheology and structures of flowing polymer blends; (co-supervisor E. Peuvrel-Disdier)
- T. De'Nève (1993) Relations between structure, defects and rheology of thermotropic polymers; (co-supervisor M. Kléman)
- A. Paris (1992) Influence of spinning conditions on the physical and mechanical properties of polypropylene fibres; (co-supervisor J.M. Haudin)
- J.N. Baleo (1991) On the injection of thermotropic polymers; (co-supervisor M. Vincent)
- T. Aubry (1990) Modelling of the flow of semi-flexible polymer concentrated solutions
- E. Peuvrel (1990) Flow of liquid crystalline polymers around obstacles
- B. Ernst (1989) Rheology and rheo-optics of liquid crystalline hydroxypropylcellulose

**Supervising of more than 26 post-doctoral scientists and 78 undergraduates.**

## **SCIENTIFIC MANAGEMENT**

### **Scientific management of research contracts**

- Direct scientific responsibility of more than 45 research contracts with industry and EC or governmental agencies since 1984.

### **Co-ordination of collaborative research contracts**

#### **Academic research programmes**

*French-UK* (1987-1988) with City of London Polytechnic, *French-UK Alliance programme* (1992-1994) with University of Reading, *CNRS-NSF* (1993-1995) with Stanford University, *CNRS-Romanian Academy of Sciences* (1993-1996) with University of Iasi, *CNRS-Russian Academy of Sciences* (1998-2003; 2008-2012) with Institute of Macromolecular Compounds, St Petersburg.

### European research programmes

Coordinator of the *BRITE-EURAM Project* (1993-1996) on polymer blends, three partners and ten industrial sponsors.

Coordinator of the *Human Capital and Mobility and PECO networks* (1995-1997) on polymer solution rheology, seven partners.

Coordinator of Polysaccharides (*Network of Excellence*) 2005-2009 (16 partners).

Coordinator of EPNOE CSA, 2012-2015 (16 partners).

### Large research programmes

Co-coordinator of the large (30M€) French project “Biomass for the Future”. Responsible for the application program (2013-2020).

## **BRINGING SCIENCE TO THE GENERAL PUBLIC**

Establishment in 2018 and Presidency of “Science pour Tous 06” association (<http://spt06.fr/>), with more than 75 scientists. Organization of conferences for the general public in more than 20 cities in the Alpes-Maritimes region (more than 100 conferences organized each year).

## **PUBLICATIONS**

### Articles

International Refereed Journals : 176

Other Journals : 17

Books : 3

Patent : 1

### Conferences

Invited Conferences : 82

Communications in Conferences : 288