

José BICO

Born May 24th, 1972 in Bordeaux, France.
French and Portuguese citizenships.

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Education

- 1997-2000** **Ph.D.** (summa cum laude) at the Laboratoire de Physique de la Matière Condensée, Collège de France, supervised by David Quéré.
- 1992-1996** **Graduated** from the **École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI)**, French engineering *grande école* directed by P.G. de Gennes. **Diplôme d'Études Approfondies (DEA)**, MS degree in **Physical Chemistry**.

Research experience

- 2000-2003** **Postdoc** at the Dep. of Mech. Eng., MIT, supervised by Gareth McKinley:
Viscoelastic instabilities in stretched liquids. Extensional rheology of complex fluids.
Rolling sliding and adhesion of a sphere on a coated surface.
Condensation on hydrophobic materials.
- 1997-2000** **Ph.D. thesis** at the Laboratoire de Physique de la Matière Condensée, Collège de France supervised by David Quéré (granted by the Rhodia company):
Spontaneous motion of liquid indexes in capillary tubes.
Super hydrophobicity, wettability and 2D imbibition of micro-patterned surfaces.
- 1996-1997** **Military service** at the Office National d'Études et de Recherches Aérospatiales:
Rheology and stability of suspensions.
- 1995-1996** **DEA internship** (supervised by D.Quéré): *Capillary sorption by porous membranes.*
- 1994** **Engineer internship** supervised by L.Vovelle in a Rhône-Poulenc research laboratory:
Coating of synthetic fibers.

Teaching experience

- 2003** **Course** for the Independent Activities Program at MIT: "Millifluidics".
- 2000-2001** **Teaching Assistant for lab course** in Interfacial Hydrodynamics at École Polytechnique.
- 2000** **Research supervision** a of DEA student.
- 1998-2000** **Tutoring** in Thermodynamics at the ESPCI.
- 1998** **Teaching Assistant** in Medical Physics at the Paris V University.
- 1997** **Animator** at the Palais de la Découverte (science museum in Paris).

Publications

- J.Bico, C.Marzolin and D.Quéré, "Pearl drops", *Europhysics Letters*, **47** 220 (1999).
- D.Quéré, J.Bico and D.Richard, "Le mouillage nul (ou presque)", *Bulletin de la Société Française de Physique*, **125** 8 (2000).
- J.Bico and D.Quéré, "Liquid trains in a tube", *Europhysics Letters*, **51** 546 (2000).
- D.Quéré, J.Bico & D.Richard, "Three attempts on dry wetting", *Nonlinear Wave Behavior in Multiphase Flow*, Kluwer (2000).
- J.Bico, C. Tordeux and D.Quéré, "Rough wetting", *Europhysics Letters*, **55** 214 (2001).
- J.Bico & D.Quéré, "Falling slugs", *J. Colloid Inter. Sci.*, **243** 262 (2001).
- J.Bico, U.Thiele & D.Quéré, "Wetting of textured surfaces", *Colloid & Surfaces*, **206** 41 (2002).
- J.Bico & D.Quéré, "Rise of liquids and bubbles in angular capillary tubes", *J. Colloid Inter. Sci.* **247** 162 (2002).
- J.Bico and D.Quéré "Self-propelling slugs in a tube", *J. Fluid Mech.* **467** 101 (2002).
- J.Bico & D.Quéré, "Precursors of impregnation", *Europhysics Letters* **61** 348 (2003).
- D.Quéré, A.Lafuma & J.Bico, "Slippy and sticky microtextured structures", accepted to *Nanotechnology*. (2003).
- J.Bico, J.Vierling, A.Vigano, D.Quéré, "Self-similar etching", accepted to *J. Colloid Inter. Sci.* (2003).
- L. Tanton-Elkins, P. Aussillous, J. Bico, D. Quéré & J. Bush, "A laboratory model of splash –form tektites", accepted to *Meteoritics and Planetary Sci.* (2003)
- N.Kojic, J.Bico, C.Clasen & G.McKinley, " *Ex-vivo* rheology of spider silk", submitted to *Nature Materials*.
- L.Mahadevan, J.Bico, & G.McKinley, " *Popliteal rippling of multi-wall elastic tubes*", submitted to *Science*.

Conferences (since 2001)

- "Rolling Stones" (invited talk)
ESF Meeting, San Feliu de Guixols, March 29th-April 3rd 2003.
- "Self-propelling slugs in capillary tubes" (invited talk)
ASME Conference, New Orleans, November 17-22, 2002.
- " Rolling, Sliding and Adhesion on a viscous wall"
(oral presentation) APS Division of Fluids Dynamics Meeting, Dallas, November 24-26, 2002.
(poster) Gordon Conference on Adhesion, Tilton school, August 18-23, 2002.
- " Viscoelastic Free Surface Instabilities During Exponential Stretching"
(vidéo) APS Division of Fluids Dynamics Meeting, San Diego, November 18-20, 2001.
(poster) Society of Rheology annual meeting, Bethesda, October 21-25, 2001.
- "Wetting (or non wetting) of textured surfaces" (poster)
TRI Workshop on Nanocapillarity, Princeton, June 4-6, 2001.

Invited seminars (since 2000)

"Like a Rolling Stone?", Computation in science seminars, Chicago University, November 6th, 2002 and HML Seminars, MIT, October 29th, 2002.

"Viscoelastic Instabilities in Stretched Liquids", Squishy Physics, Harvard University, March 27th, 2002 and Brown bag seminars, Department of Mathematics, MIT, April 5th, 2002.

"Liquides étirés", CRPP, Bordeaux, puis LPMC, Nice et IMFT, Toulouse, November 2001.

"Liquid trains in a tube", Seminars in Fluid Mechanics and Material Processing, MIT, April 6th, 2001

"Gouttes automotrices et mouillage dynamique en strates", FAST, Orsay, France, May 10th, 2000.

"Bigouttes filantes, films de bigouttes et bigouttes fileuses", IRPHE, Marseille, France, March 29th, 2000 and PCT, ESPCI, Paris, March 14th, 2000.

"Trains de gouttes", Rhodia, Lyon, France, March 7th, 2000.

Interests

Hiking, scuba diving, sailing, travels, cooking for friends.

References

Gareth McKinley, Professor, Dep. of Mech. Eng., MIT, Room 3-250, 77 Mass. Av., Cambridge, MA02139, USA ☎ (1) 617 258 0754, e-mail : gareth@mit.edu

David Quéré, CNRS Director of Research, Physique de la Matière Condensée, Collège de France, 11 place Marcelin Berthelot, 75005 Paris, France. ☎ (33) 1 44 27 10 66, e-mail: quere@ext.jussieu.fr

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