

CURRICULUM VITAE

ALAIN BRUNELLE

born January 23, 1964

Research Director (DR1) at CNRS

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A/ Education

2002 “Habilitation à Diriger des Recherches”, Chemistry, Paris-Sud University, Orsay,

1990 Ph.D., Physics, Paris-Sud University, Orsay,

1986 Agrégation de Sciences Physiques, Option Physique,

1983-1987 École Normale supérieure de Saint-Cloud.

B/ Professional experience

Since 2013 Research Director (1st rank) at CNRS (ICSN, Gif-sur-Yvette)

2006-2013 Research Director (2nd rank) at CNRS (ICSN, Gif-sur-Yvette)

2002-2006 Research Associate (“Chargé de Recherche”) at CNRS (ICSN, Gif-sur-Yvette),

1990-2002 Research Associate (“Chargé de Recherche”) at CNRS (Institute of Nuclear Physics, IPN, CNRS, Orsay),

1988-1990 Ph.D. at IPN (CNRS, Orsay Gif),

1987-1988 Military Service, Professor of Physics, École Spéciale Militaire de Saint-Cyr Coëtquidan.

From 1988 to 2002, my main research subject was the study of the interactions of energetic particles (ions, clusters, molecules, photons) with matter. A first part of this work concerned the mechanisms of energy deposition and energy relaxation of incident particles in an inorganic or molecular target. The second and complementary part concerned some instrumental developments involving time-of-flight mass analysers, new desorption-ionisation probes, and detection systems.

Since 2002 in charge of a project of biological imaging by mass spectrometry by cluster-TOF-SIMS and MALDI-TOF. This work is conducted in three directions: treatment and use of biological tissue sections, improvement of instrumental methods, and application to in situ studies of lipid disorders linked to human diseases.

Since 2010, Head of Mass Spectrometry Group at ICSN-CNRS.

Expertise field: Mass spectrometry instrumentation (time-of-flight analysers, detectors, ion sources), Mass Spectrometry Imaging.

C/ Ph.D. Award of the French Mass Spectrometry Society (1990),

Award of the Analytical Chemistry Division of the French Chemical Society (2007)

D/ Lecture at the Collège de France 5 May 2014

<http://www.college-de-france.fr//video/en-philippe-walter/sem-walter-brunelle-20140505-en.mov>

E/ Member of the French Mass Spectrometry Society and of the American Society of Mass Spectrometry

Chairman of the 18th French Mass Spectrometry Conference, 2001

Past president of the French Mass Spectrometry Society, 2004-2006

Member of the scientific committee of 1st SCBA 2005, 23th JFSM 2006, Desorption 2000, Desorption 2010, SIMS XVIII 2011, SIMS XIX 2013, Desorption 2014, SIMS XX 2015

F/ Participation in projects

- Member of LabEx CEBA (Centre d'Etude de la Biodiversité Amazonienne) and LERMIT (Recherche sur le Médicament et l'Innovation Thérapeutique)

- Member of the management committee of the EU COST action BM1104

'Mass Spectrometry Imaging: New Tools for Healthcare Research'

- Partner of EU-FP7 consortium BIOMARGIN (2013-2017): www.biomargin.eu

- Coordinator of project DEFIMAGE (ANR Defi de tous les savoirs 2016-2019: "A great challenge for mass spectrometry imaging")

- Coordinator of completed project MASS-IMAGE (ANR Blanc 2011-2014): "New methods in mass spectrometry imaging for the study of the Alzheimer's disease"

- Partner of completed projects: MASDA-EYE (ANR Piribio 2010-2013) "MAss Spectrometry imaging Data Analysis: application to pharmacotoxicology in EYE", ANTIPARK (ANR Emergence 2011-2013) "New neuroprotective and neuroregenerative compounds for Parkinson's disease", EICO-CF (2008-2010) and MACBAC (2006-2008), EU-FP6 consortium COMPUTIS (2006-2009) www.computis.org

G/ 118 publications (international peer-reviewed journals, 42 in the last 5 years), 21 peer-reviewed proceedings and other journals, 4 book chapters,

h-index 33, total number of citations 3400 (source Researcher ID, February 2016)

78 invited conferences (22 plenary lectures at national and international conferences)

H/ 10 most cited publications

1 TISSUE MOLECULAR ION IMAGING BY GOLD CLUSTER ION BOMBARDMENT

D. Touboul, F. Halgand, A. Brunelle, R. Kersting, E. Tallarek, B. Hagenhoff, O. Laprèvote, Anal. Chem. 76 (2004) 1550-1559
<http://dx.doi.org/10.1021/ac035243z>

2 IMPROVEMENT OF BIOLOGICAL TOF-SIMS IMAGING WITH A BISMUTH CLUSTER ION SOURCE

D. Touboul, F. Kollmer, E. Niehuis, A. Brunelle, O. Laprèvote J. Am. Soc. Mass Spectrom. 16 (2005) 1608-1618
<http://dx.doi.org/10.1016/j.jasms.2005.06.005>

3 IMPACT OF SLOW GOLD CLUSTERS ON VARIOUS SOLIDS. NON LINEAR EFFECTS IN SECONDARY ION EMISSION

M. Benguerba, A. Brunelle, S. Della-Negra, J. Depauw, H. Joret, Y. Le Beyec, M.G. Blain, E.A. Schweikert, G. Ben Assayag, P. Sudraud Nucl. Instrum. Methods Phys. Res. B 62 (1991) 8-22
[http://dx.doi.org/10.1016/0168-583X\(91\)95922-Z](http://dx.doi.org/10.1016/0168-583X(91)95922-Z)

4 TRACKS IN METALS BY MEV FULLERENES

H. Dammak, A. Dunlop, D. Lesueur, A. Brunelle, S. Della-Negra, Y. Le Beyec, Phys. Rev. Lett. 74 (1995) 1135-1138
<http://dx.doi.org/10.1103/PhysRevLett.74.1135>

5 BIOLOGICAL TISSUE IMAGING WITH TIME-OF-FLIGHT SECONDARY ION MASS SPECTROMETRY AND CLUSTER ION SOURCES

A. Brunelle, D. Touboul, O. Laprèvote J. Mass Spectrom. 40 (2005) 985-999
<http://dx.doi.org/10.1002/jms.902>

6 GIANT METAL SPUTTERING YIELDS INDUCED BY 20-5000 KEV/ATOM GOLD CLUSTERS

H.H. Andersen, A. Brunelle, S. Della-Negra, J. Depauw, D. Jacquet, Y. Le Beyec, J. Chaumont, H. Bernas Phys. Rev. Lett. 80 (1998) 5433-5436
<http://dx.doi.org/10.1103/PhysRevLett.80.5433>

7 VERY LARGE GOLD AND SILVER SPUTTERING YIELDS INDUCED BY KEV TO MEV ENERGY AUN CLUSTERS (N = 1-13)

S. Bouneau, A. Brunelle, S. Della-Negra, J. Depauw, D. Jacquet, Y. Le Beyec, M. Pautrat, M. Fallavier, J.C. Poizat, H.H. Andersen Phys. Rev. B 65 (2002) 144106, 1-8
<http://dx.doi.org/10.1103/PhysRevB.65.144106>

8 ENERGY LOSS BY MEV CARBON CLUSTERS AND FULLERENE IONS IN SOLIDS

K. Baudin, A. Brunelle, M. Chabot, S. Della-Negra, D. Gardès, P. Håkansson, Y. Le Beyec, A. Billebaud, M. Fallavier, J. Remillieux, J.P. Thomas, J.C. Poizat Nucl. Instrum. Methods Phys. Res. B 94 (1994) 341-344
[http://dx.doi.org/10.1016/0168-583X\(94\)95376-7](http://dx.doi.org/10.1016/0168-583X(94)95376-7)

9 LIPID IMAGING BY GOLD CLUSTER TIME-OF-FLIGHT - SECONDARY ION MASS SPECTROMETRY: APPLICATION TO DUCHENNE MUSCULAR DYSTROPHY

D. Touboul, A. Brunelle, F. Halgand, S. De La Porte, O. Laprèvote, J. Lipid Res. 46 (2005) 1388-1395
<http://dx.doi.org/10.1194/jlr.M500058-JLR200>

10 *IN SITU* LIPIDOMIC ANALYSIS OF NON-ALCOHOLIC FATTY LIVER BY CLUSTER TOF-SIMS IMAGING

D. Debois, M.P. Bralet, F. Le Naour, A. Brunelle, O. Laprèvote, Anal. Chem. 81 (2009) 2823-2831
<http://dx.doi.org/10.1021/ac900045m>