

Jean-Francois Masson

Correspondence address

740 W. University #217

Tempe, AZ, USA

85281

(602) 793-7588

e-mail : jmasson@asu.edu

Permanent address

212 Notre-Dame #510

Repentigny, Qc, Canada

J6A 8G6

(450) 654-9494

e-mail : jfmasson@hotmail.com

Education

2002-present **Arizona State University** Tempe, AZ, USA

Ph.D. Analytical chemistry, Advisor: Karl S. Booksh

- Expected graduation date: Summer 2005, GPA 4.0 over a maximum 4.0
- Surface Plasmon Resonance (SPR) biosensors for heart attack, spinal muscular atrophy, and wound healing and the development of novel surface coatings to maximize sensor's signal and minimize non-specific adsorption
- Study of photoisomerisation of photochromic molecules on SPR sensors and the analysis of excess dielectric properties, mixing thermodynamics and mixing dynamics using SPR sensors

1998-2001 **Université de Sherbrooke** Sherbrooke, QC, Canada

B.Sc. Chemistry, cooperative

- Program completed in December 2001, GPA of 4.09 over a maximum of 4.3, Second highest GPA in the class

1995-1998 **Collège Ahuntsic** Montréal, QC, Canada

Analytical chemistry techniques

- Program completed in May 1998, with an R grade (equivalent to GPA) of 32.1, highest R grade in the program for the 1998 class

Awards

1. Graduate level scholarship in chemistry for \$20,000 CDN/ academic year from May 2004 to December 2005. Given by FCAR/FQRNT, Québec government, ranked 3rd for the scholarship
2. Graduate level scholarship in chemistry for \$21,000 CDN/ academic year for 2004 and 2005. Given by NSERC, Canadian government
3. Outstanding graduate research assistant award in the department of chemistry and biochemistry at Arizona State University in 2003-2004
4. Graduate level scholarship in chemistry for \$15,000 CDN/ academic year from May 2002 to December 2003. Given by FCAR/FQRNT, Québec government, ranked 1st for the scholarship
5. Graduate level scholarship in chemistry for \$17,500 CDN/ academic year for year 2002 and 2003. Given by NSERC, Canadian government

6. Award from J-Armand-Bombardier foundation of the Université de Sherbrooke in 2000-2001 for excellent academic results
7. Second prize for a talk in physical chemistry during the 13^{ième} colloque de chimie des étudiants de premier cycle de l'université de Sherbrooke
8. Best presentation award among summer students at Merck Frosst Canada in 2001
9. Award from Produits American Biltrite foundation of the Université de Sherbrooke in 1999-2000 for excellent academic results
10. Award from Produits American Biltrite foundation of the Université de Sherbrooke in 1998-1999 for excellent academic results
11. Award from the Canadian society for chemistry technologies for the best academic results in analytical chemistry techniques in 1998 at Collège Ahuntsic
12. 4th place at the chemistry contest of the Quebec Corporation of chemists for 1997 in Québec
13. Participated at the Canadian Chemistry Olympiads in 1997 with the best 16 high school chemistry students in Canada
14. Lucien-Piché award in 1997

Publications

1. Masson J-F., Obando L., Beaudoin S., Booksh K., Sensitive And Real-Time Fiber-Optic Based Surface Plasmon Resonance Sensors for Myoglobin And Cardiac Troponin I, *Talanta*, 62 (2004) 865-870
2. Gentleman, D.J., Obando, L.A., Masson, J.-F., Holloway, J., Booksh, K.S., Calibration of fiber optic based surface plasmon resonance sensors in aqueous systems, *Analytica chimica acta*, 2004, vol. 515, 291-302
3. Masson, J-F., Barnhart, M., Battaglia, T.M., Morris, G.E., Nieman, R., Young, P.J., Lorson, C.L., Booksh, K.S., Quantification of Survival Motor Neuron protein for the Diagnosis of Childhood Spinal Muscular Atrophy Using Surface Plasmon Resonance, *Analyst*, 2004, 129, 855-859
4. Masson, J.-F., Battaglia, T.M., Kim, Y.-C., Prakash, A., Beaudoin, S., Booksh, K.S., Preparation of Analyte-Sensitive Polymeric Supports For Biochemical Sensors, *Talanta*, 2004, 64/3, 716-725
5. Masson, J.-F., Hartmann, T., Dürr, H., Booksh, K.S., Solid-Phase Synthesis And Photochromic Switching Of A Polymeric Photochromic Layer On A Gold Surface, *Optical materials*, In Press
6. Masson, J-F., Booksh, K.S., Analysis of Excess Dielectric Properties of Binary Mixtures, Ternary Mixtures and Mixing Dynamics Measurement Using Surface Plasmon Resonance, *Thermochimica Acta*, In review
7. Masson, J.-F., Battaglia, T.M., Davidson, M.J., Kim, Y.-C., Prakash, A., Beaudoin, S., Booksh, K.S., Study of 28 Coatings for Optimizing Signal Enhancement and Anti-Fouling Properties of Biosensors, *Analytical Chemistry*, In review
8. Kim, Y.-C., Masson, J.-F., Banerji, S., Booksh, K.S., Fiber Optic Sensors based on Surface Plasmon Resonance Spectroscopy for Low Refractive Index (RI) Determination, *Analytical Chemistry*, In review

Proceedings

1. Masson J-F., Hamersky K., Beaudoin S., Booksh K., In vitro biochemical monitoring with fiber optic based surface plasmon resonance sensors, *SPIE proceedings*, 2003, vol. 5261, 123-134
2. Booksh, K.S., Prakash, A., Kim, Y.-C., Banerji, S., Masson, J.-F., Fiber optic based surface plasmon resonance sensors for the detection of toxic nerve agents, *SPIE proceedings*, 2003, vol. 5269, 99-110

Patents

1. Booksh, K.S, Masson, J.-F., Prakash, A., Kim, Y.-C., US patent # 60/454,173 March 2003, Title: Surface initiated thin polymeric films for chemical sensors
2. Booksh, K.S, Masson, J.-F., US patent #60/473,861 May 2003, Title: Use of PEEK Polymer Connectors and Fiber Optics for Surface Plasmon Resonance Sensors
3. Booksh, K.S, Masson, J.-F., US Patent # 60/478,733 June 2003, Title: Optical Data Storage on Surface Plasmon Resonance Sensors With a Dextran Polymer and Ethylester-dihydroindolizine
4. Booksh, K.S, Masson, J.-F., US Patent #60/494,389, August 2003, Title: Biocompatible polymers as supports for surface plasmon resonance biosensors

Departmental Seminars

1. Université Laval, Québec, QC, Canada, Feb. 2004,
 - *SPR for complex solution monitoring*

Conferences

1. SPIE 2003, Providence, RI, USA, Oct. 2003,
 - Talk: *In vitro biochemical monitoring with fiber optic based surface plasmon resonance sensors*
2. FACSS 2003, Fort Lauderdale, FL, USA, Oct. 2003,
 - Talk: *Fiber-optic based surface plasmon resonance for in-vivo biochemical monitoring: detection of myocardial infarctions*
3. CSC-IUPAC 2003, Ottawa, ON, Canada, Aug. 2003,
 - Talk: *Fiber optic based SPR sensors for in vivo biochemical monitoring: Detection of myocardial infarction*
 - Poster: *Synthesis and photochromic switch characterization of a ethylester-Dihydroindolizine-Dextran coating on a surface plasmon resonance sensor*
4. FACSS 2002, Providence, RI, USA, Oct. 2002,
 - Poster: *Fiber-optic based surface plasmon resonance sensors for in-vivo biochemical monitoring*
 - Poster: *A new Dextran-Diacetyldihydroindolizine photochromic layer studied by surface plasmon resonance*
5. Biodevice 2002, Scottsdale, AZ, USA, Sept. 2002,

- Poster: *Fiber-optic based surface plasmon resonance sensors for in-vivo biochemical monitoring*
6. 13^{ième} colloque des étudiants de premier cycle (13th colloquium for undergraduate chemistry students), Sherbrooke, QC, Canada, Oct. 2001,
 - Talk: *Nouvelles techniques en chromatographie liquide préparative (New techniques in preparative HPLC)*
 7. Moot 13 NMR, Sherbrooke, QC, Canada, Sept. 2001
 8. Canadian society for chemistry, Montréal, QC, Canada, May 2001
 9. 12^{ième} colloque des étudiants de premier cycle (12th colloquium for undergraduate chemistry students), Sherbrooke, QC, Canada, Oct. 2000
 10. 11^{ième} colloque des étudiants de premier cycle (11th colloquium for undergraduate chemistry students), Sherbrooke, QC, Canada, Oct. 1999

Teaching experience

Teaching Assistant, Arizona State University

- Spring 2002, General Chemistry for Engineers
- Spring 2004, Instrumental analysis

Professional experiences

Merck Frosst Canada May-August 2001 Kirkland, Montréal, QC, Canada

- Implementation of a chromatographic method to increase the purification capacity of chromatographic columns on a HPLC-MS-UV light scattering in normal, reverse and chiral phases

Boehringer-Ingelheim (Canada) Itée January-April and September-December 2000
Laval, QC, Canada

- Development of a purification method for large quantities on HPLC

Hydro-Québec (IREQ) May-August 1999 and May-June 1998 Varennes, QC, Canada

- Polymer analysis by HPLC and quantification of chromium, copper and arsenic analysis in wood samples by atomic adsorption

Contact List

Karl S. Booksh, research advisor, Associate Professor, Arizona State University, 480-965-3058, booksh@asu.edu

Stephen Beaudoin, co-PI on research project, Associate Professor, Purdue University, 765-494-7944, sbeaudoi@purdue.edu

Peter Williams, Professor, Arizona State University, 480-965-4107, pw@asu.edu

Frank Vogt, Faculty Research Associate, Arizona State University, 480-727-6481, fvogt@asu.edu