YOAN C. SIMON

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CARRER OBJECTIVE:

Academic position at a research institution.

EDUCATION:

PhD in Polymer Science and Engineering
University of Massachusetts, Amherst, *August 2008*
Advisor: E. Bryan Coughlin

Diplôme d'Ingénieur des Grandes Ecoles, Materials Chemistry
Ecole Nationale Supérieure de Chimie de Montpellier (ENSCM), France, *November 2004*
Advisor : Bernard Boutevin

Classe Préparatoires aux Grandes Ecoles, PCSI-PC*
Lycée Joffre, Montpellier France,

AWARDS AND HONORS :

2008 ETH Fellowship
Rewarding academic excellence for the proposed work on two-dimensional polymers

2007 Massachusetts Space Grant Consortium-NASA Award.
Rewarding creativity and originality of the work entitled "Synthesis and Polymerization of Silyl-protected OxoNorbornene Imide Carborane (SONIC), a Novel Approach to Radiation Shielding."

2007 "Designed Macromolecular Assemblies for Biomedical Applications" Graduate Talk Award (233rd ACS)
Rewarding an outstanding graduate talk, "Preparation of High-Boron Content Diblock Copolymers for Boron Neutron Capture Therapy Applications".

2006 Massachusetts Space Grant Consortium-NASA Award
Rewarding creativity and originality of the work entitled "Smart Design of Multifunctional Hybrid Materials for Space Exploration: Synthesis and Characterization of Polyethylene with Pendant Carborane Moieties"

2003 Recipient of a European Leonardo da Vinci Scholarship-Languedoc-Roussillon scholarship
Rewarding students' initiative by helping intra-European industrial mobility.

RESEARCH EXPERIENCE:

Post-doctoral Researcher: *2009-Present*
Synthesis of novel polymeric architectures for light up-conversion via triplet-triplet annihilation. Utilization of novel substrates for up-conversion.
Supervision: Prof. Christoph Weder

Post-doctoral Fellow: *2008-2009*
Synthesis of rigid propeller-like monomers containing diazaanthracene moieties for the development of two dimensional polymers by self-assembly and light exposure.
Supervision: Prof. A. Dieter Schlüter

Doctoral Student: *2003-2008*
Synthesis of hybrid inorganic-organic polymers containing carboranes as pendant groups. Developing new avenues to obtain space survivable materials by controlling the incorporation of boron clusters into polymers. Investigating possible applications of these hybrids in boron neutron capture therapy for cancer, neutron detection and nanoimprint lithography.
Supervision: Prof. E. Bryan Coughlin

Research Assistant: Cray Valley Ibérica, S.A., Sant Celoni, Spain, *Summer 2003*
Near-infrared analysis of oil supplies for the fabrication of varnishes for the ink industry. Developed a methodology for the control of the quality raw materials and elaboration of a model for the characterization of aromatics in varnishes.
Supervision: Dr. Francesc Williams

Undergraduate Researcher: ENSCM, *School year 2002-2003*
Synthesis and characterization of diblock copolymer compatibilizers by ATRP.
Supervision: Prof. Bernard Boutevin.

Technician: Università degli Studi di Firenze, Florence, Italy, *Summer 2002*
Synthesized and purified peptide sequences by solid-phase peptide synthesis (automated and semi-automated). Characterization by high-performance liquid chromatography and mass spectroscopy.
Supervision: Prof. Anna-Maria Papini

TEACHING EXPERIENCE:

Student Advisor: Directed 10-week research projects for several visiting exchange students. 2006-2008

Teaching Assistant: Polymer Chemistry Laboratory, including preparation and lectures. 2006-2007

Tutoring: Tutored high school and undergraduate students in maths, chemistry and physics.

PUBLICATIONS:

1. "Amphiphilic Carborane-Containing Diblock Copolymers" **Yoan C. Simon**, Christian Ohm, Melanie J. Zimny and E. Bryan Coughlin, *Macromolecules*, **2007**, *40*(16), 5628 - 5630.
2. "Synthesis of Polyfluorenes with Pendant Silylcarboranes" **Yoan C. Simon**, Joseph J. Peterson, Christine Mangold, Kenneth R. Carter and E. Bryan Coughlin, *Macromolecules*, **2009**, 2009, *42*(2), 512 - 516.
3. "Polyfluorene with p-Carborane in the Backbone" Joseph J. Peterson, **Yoan C. Simon**, E. Bryan Coughlin and Kenneth R. Carter, Chem. Comm., **2009**, 33, 4950 - 4952
4. "Silylcarborane Acrylate Nanoimprint Lithography Resists" **Yoan C. Simon**, Isaac W. Moran, Kenneth R. Carter and E. Bryan Coughlin, ACS Applied Materials &

Interfaces, **2009**, 1, 1887 - 1892

5. "Carborane-Containing Polyfluorene: o-Carboranes in the Main Chain" Joseph J. Peterson, Mathias Werre, **Yoan C. Simon**, Kenneth R. Carter and E. Bryan Coughlin, *Macromolecules*, 42, 8594 - 8598
6. "Ring-Opening Metathesis Copolymerization of Cyclooctene and a Carborane-Containing Oxanorbornene" Yoan C. Simon and E. Bryan Coughlin, *J. Poly. Sci.Part A, Submitted*
7. "Dual mechanism membranes: Ring-Opening Metathesis Polymerization of Diblock Copolymers Oxanorbornenes Bearing Sulfonic Acid and Triazole Functionalities" Makoto Higami, **Yoan C. Simon**, Sergio Granados-Fócil and E. Bryan Coughlin, *In preparation*

CONFERENCE PROCEEDINGS:

1. "Versatile Carborane-Containing Polymers: From Outer Space to Confined Spaces" Yoan C. Simon and E. Bryan Coughlin *MRSEC* Fall **2007**.
2. "High-Boron Content Diblock Copolymers for BNCT Applications: Synthesis and Toxicity Studies" Yoan C. Simon, E. Bryan Coughlin, **2007** Gordon Research Conference Polymer (East)
3. "Preparation of High-Boron Content Diblock Copolymers for BNCT Applications" Yoan C. Simon, Tarik Eren and E. Bryan Coughlin *Amer. Chem. Soc., Division of Polymeric Materials: Science and Engineering,PMSE Preprints* **2007**, 96, 331-332.
4. "Smart Design of Novel Carborane Polymers for Ceramics and Radiation Shielding Yoan C. Simon and E. Bryan Coughlin *MRSEC* Fall **2006**.
5. "Carborane Clusters Tethered to a Polymeric Matrix" Yoan C. Simon and E. Bryan Coughlin *MRSEC* Fall **2005**
6. "Novel Hybrid Polymeric Materials Incorporating Carboranes" Yoan C. Simon and E. Bryan Coughlin, *Amer. Chem. Soc., Division of Polymer Chemistry, Polymer Preprints* **2005**, 46(2), 771-772.
7. "Inorganic-Organic Hybrid Polymers Incorporating Carborane Clusters" Yoan C. Simon and E. Bryan Coughlin *MRSEC* Fall **2004**

ACADEMIC SERVICES:

Group NMR manager and Senior Departmental Czar: Training of new group members and instrument troubleshooting and supervision.

Intergroup Meetings Coordinator: Organizing meetings designed to foster intergroup communication in the department. 2006

International Program Officer: Assisted foreign chemistry students in acclimating to their new environment. (housing, banking, schooling, etc). Secretary work, contributed to the design of a reimbursement system for participants, 2002-2003.

PROFESSIONAL AFFLIATION:

American Chemical Society 2005-2008
Swiss Chemical Society 2009-2010

LANGUAGES:

French (Native language), English (Bilingual), Spanish (Fluent), German (Basic knowledge), Italian (Conversational).