



PERSONAL INFORMATION

Name	DR. SAUCA SORIN NICOLAE
Status	Married
Address	Calle San Antoni Maria Claret, No.32, Esc. 5, 3^o, 2^a, Tarragona, 43002, Spain
Telephone	(0034)606239442
Fax	-
E-mail	saucasorin@gmail.com
Nationality	Romanian
Date of birth	09/12/1978

EDUCATION AND TRAINING

- **Dates (09/2013–present)**
Senior Project Fellow.
Henkel-ICIQ Unit, Catalan Institute for Chemical Investigation, Manager: Dr. Ligang Zhao, Tarragona, Spain.
- **Name and type of organization**
Development of competitive and low-cost produces and technologies based on the synthesis of waterborne polyurethanes, polyacrylates and silicone adhesives and coatings by emulsion and miniemulsion polymerization, for application in industry, corresponding to customer requirements.
Characterization of the polymer dispersions by DSC, TGA, rheology, IR, NMR, light scattering, heat resistance, creep test, aging test, lapshear and peeling strength (Instron apparatus), B2 flame resistance.
Industrial know-how on the adhesive applications gained in Henkel R@D Centre, Heidelberg, Germany.
Scale-up (200kg) of the polymer process in the pilot plant in Henkel Dusseldorf, Germany.
Writing periodically reports for Henkel management and participating in brainstorming meetings.
Keeping data books on day and organize the work in the laboratory in conformity with 5S protocol.
Submitted 5 patent disclosures with Henkel.
- **Principal subjects/occupational**
Encapsulation of reactive bleaches used in detergent formulations by emulsion processes, interfacial polymerization, solvent evaporation and spray-drying.
Participate in periodically meetings and write scientific reports.
Link the academia and industrial research.
Teaching experimental chemical engineering classes for MSc students.
- **Dates (04/2011–03/2013)**
Marie Curie Research Fellow, part of the European "CAP-IT!" Industry-Academia Partnerships & Pathways project leaded by Procter & Gamble Brussels, Europe.
- **Name and type of organization**
School of Chemical Engineering, Head: Prof. Zhibing Zhang, University of Birmingham, Birmingham, UK.
- **Principal subjects/occupational**
Encapsulation of reactive bleaches used in detergent formulations by emulsion processes, interfacial polymerization, solvent evaporation and spray-drying.
Participate in periodically meetings and write scientific reports.
Link the academia and industrial research.
Teaching experimental chemical engineering classes for MSc students.
- **Dates (05/2005–05/2010)**
Doctoral studies in Polymeric Materials and Applied Chemistry, title of the thesis: "Catalytic polymerization and copolymerization of ethylene and acrylates in aqueous and non-aqueous media", part of "Columbus" project funded by Rohm&Haas Company, USA.

- **Name and type of organization** Institute of Polymeric Materials, Chemical Engineering Group, Head: Prof. José María Asua, The University of the Basque Country, San Sebastián, Spain.
- **Principal subjects/occupational** Building-up a olefin polymerization installation able to work in inert media at pressures up to 60 bar.
Catalytic polymerization and copolymerization of ethylene and α -olefins in emulsion and miniemulsion systems.
Synthesis of olefin-acrylic coatings by catalytic polymerization with organometallic phosphino-palladium catalysts in emulsion and miniemulsion media.
Emulsion and miniemulsion formulations stabilized by anionic, ionic and cationic surfactants.
Control of the structure and composition of the polymeric nanoparticles.
Kinetic measurements of the emulsion polymerization parameters.
Estimation of kinetic constants by mathematical models.
Experienced in performing work in inert atmosphere (glove-box, Schlenk tubes).
Synthesis of acrylic macromonomers by high-temperature free radical polymerization.
Techniques applied for the characterization of olefin latexes: DSC, NMR, SEM, UV-VIS, IR, GPC, GC, HPLC, TURBISCAN, NANOSIZER, CHDF, DISC CENTRIFUGATION, SURFACE TENSOMETER, MFFT APPARATUS, ADHESIVE PROPERTIES, MECHANICAL PROPERTIES and latex RHEOLOGY.
- **Title of qualification awarded** Doctor Europeus – Summa Cum Laude.
- **Dates (04/2009–07/2009)** Research Mobility Stage.
- **Name and type of organization** Laboratory of Macromolecular Chemistry, Head: Prof. Bernadette Charleux, The University Pierre and Marie Curie, Paris, France.
- **Principal subjects/occupational** Synthesis of acrylic macromonomers by controlled radical polymerization (NMP, ATRP and RAFT polymerization) and anionic polymerization in solvent and emulsion systems.
Use of NMR, GPC and column chromatography techniques for structure characterization.
- **Dates (10/2003–10/2004)** Master studies in Chemical Engineering.
- **Name and type of organization** Faculty of Chemistry, Organic Chemistry Department, Politehnica University, Timisoara, Romania.
- **Principal subjects/occupational** Natural and synthetic products of fine organic chemistry.
Chemical and biochemical activity prediction and evaluation, flavors and odors, enzymatic bio-transformations.
- **Title of qualification awarded** Master Diploma.
- **Dates (04/2003–09/2003)** Chemical Engineering studies-ERASMUS Research Stage.
- **Name and type of organization** Faculty of Organic Chemistry, Head: Prof. Henning Hopf, The Technical University of Braunschweig, Germany.
- **Principal subjects/occupational** Synthesis of building blocks for Wittig reactions.
Organic synthesis, purification of the organic compounds and their characterization by NMR, GPC and MS.
- **Dates (10/1998-09/2003)** Chemical Engineering studies.
- **Name and type of organization** Faculty of Chemistry, Organic Chemistry Department, Politehnica University, Timisoara, Romania.
- **Principal subjects/occupational** Chemistry and chemical engineering courses.
- **Title of qualification awarded** Chemical Engineer Diploma.

LANGUAGES

	Romanian, English, Spanish, German			
• Reading skills	Native	Good	Good	Beginner
• Writing skills	Native	Good	Good	Beginner
• Verbal skills	Native	Good	Good	Beginner

OTHER FORMATIONS

- **Dates (12/2013)** Introduction to 5S (A visual management tool for a safer& more productive laboratory).
- **Name and type of organization** David Farrell, PhD, Global SHE Coordinator, Adhesives Research, Henkel, Spain
- **Principal subjects/occupational** In Henkel we use 5S as an ongoing visual process to empower all employees of Henkel Technologies to create safe workplaces by applying 5S best practices for continuous and sustainable improvement.
This process fosters efficiency and productivity through a standardized global approach leading to high levels of customer satisfaction.
- **Dates (09/2005)** International Course in Emulsion Polymerization
- **Name and type of organization** Institute of Polymeric Materials, Chemical Engineering Group, The University of the Basque Country, San Sebastián, Spain.
- **Principal subjects/occupational** Water-borne polymer/inorganic hybrid materials (self-assembly techniques, polymer encapsulation of inorganic particles, coating of polymers with materials, sol-gel derived OIHM), particle morphology, kinetic of emulsion polymerization, stability of polymer colloids, miniemulsion polymerization, latex rheology, film formation of waterborne coatings, adhesion of polymers: from molecular interactions to practical adhesion.
- **Dates (05/2008-05/2009)** Management Diploma
- **Name and type of organization** BIC BERRILAN, The University of the Basque Country, San Sebastián, Spain.
- **Principal subjects/occupational** ``Creation and managing novel companies``
``From technology to the management world``
- **Dates (01/2005-03/2005)** Industrial Internship
- **Name and type of organization** S.C. SPUMOTIM Company, Timisoara, Romania
- **Principal subjects/occupational** Polyurethane formulations for automotive industry- RENAULT DACIA.

OTHER SKILLS

Ability to prepare reports for industrial partners.
Experienced to work in international teams.
Ready to accept challenging tasks.

STRENGTHS

Top 5 strengths according to ``Strength Finder 2.0``, by Tom Rath, Gallup Press, 2007, are: adaptability, strategic, connectedness, competition and self-assurance.

AWARDS

- **Dates (04/2011-03/2013)** Prestigious Marie Curie Fellowship awarded by European Commission.
- **Dates (10/1998-10/2003)** Competitive Scholarship awarded by the Romanian Minister of Education.
- **Dates (02/2000-02/2002)** Excellence Competitive Scholarship awarded by the Romanian Minister of Education.
- **Dates (07/2002)** ``The Gabriel R. Cipau Chemistry Award``, Chemistry Scholarship Fund, USA.

TECHNICAL SKILLS

SOFTWARE: FORTRAN, LABVIEW.

PATENTS

1. Henkel patent No. PT032397, "Water-based hybrid dispersions for car interior lamination applications.", submitted 30 July 2014 to European Patent Office, No. 14171545.8-1306.
2. Henkel patent No. PT033065, "Water-based polyurethane dispersions as adhesives for low energy surface bonding.", submitted December 2014.
3. Henkel patent No. PT033064, "High acrylate content, surfactants free and none high shear force process for hybrid polyurethane-acrylate aqueous stable dispersion.", submitted December 2014.
4. Henkel patent No. PT033650, "A simply process for incorporation of hydrophobic antimony-free flame retardants in water-based polyacrylic dispersions, as base polymer dispersions in adhesives and coatings.", submitted December 2015.
5. Henkel patent No. PT033753, "A general process for water-based binary antimony-free flame-retardant polyurethanes as 1K polymeric dispersions.", submitted January 2016.
6. Henkel patent No. PT033814, "Ternary systems: 1K antimony-free and surfactant-free flame retardant/hybrid polyurethane-polyacrylate waterbased nanodispersions", submitted January 2016.
7. Henkel patent No. PT033836, "Solvent-free waterborne hybrid polydimethylsiloxane/polyurethane dispersions.", submitted January 2016.

PUBLICATIONS

8. Sorin N. Sauca, José M. Asua, "Catalytic polymerization of ethylene in toluene using a Pd-organometallic catalyst", *Chem. Eng. J.*, 166, 2011, pag. 332-339.
9. Sorin N. Sauca, José M. Asua, "Catalytic polymerization of ethylene in aqueous media", *Chem. Eng. J.*, 168, 2011, pag. 1319-1330.
10. Sorin N. Sauca, Amaia Agirre, Ralph C. Even, José M. Asua, "Effect of the conformation of the alkyl chain on the catalytic miniemulsion copolymerization of ethylene and acrylates", *Eur. Polym. J.*, 48, 2012, pag. 1212-1217.
11. Sorin N. Sauca, José M. Asua, "Ethylene-acrylates catalytic copolymerization in toluene using a Pd-organometallic catalyst", Article submitted to *Macromolecules*, 2012.
12. Sorin N. Sauca and Z. Zhang, "Novel double-shell microcapsules", *Bioencapsulation*, March 2013, pag. 26-27.

PARTICIPATION IN CONFERENCES

1. MACRO 2010, 43rd IUPAC World Polymer Conference, Glasgow, UK, "Waterborne ethylene-acrylic dispersions", José M. Asua, Sorin N. Sauca, July 11-16, 2010, D14_O28.
2. 10th International Workshop on Polymer Reaction Engineering PRE10, Hamburg, Germany, "Waterborne Ethylene-Acrylic Dispersion", Sorin N. Sauca, J. M. Asua, Octubre 10-13, 2010.
3. Congrès SFC-EuroChem, Nancy, France, "Synthesis of some perfluoroacetyl phosphonic acids derivatives", S. Bilan, Sorin N. Sauca, M. Drehe, M. Petric, G. Ilia, August 28-Septembre 1, 2005, P CA08/10.
4. Congrès SFC-EuroChem, Nancy, France, "Phosphorilation of phenols derivatives", G. Simulescu, Sorin N. Sauca, L. Drehe, L. Macarie, G. Ilia, August 28-Septembre 1, 2005, P CA08/12.
5. Innovations in Encapsulation, The formulation Science and Technology group (FSTG), Royal Society of Chemistry, London, "Microencapsulation of water soluble particles", Sorin N. Sauca, Z. Zhang, Susana F. Prieto, J. Smets, December 12th, 2014.