



Shaghayegh Hamzehlou

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

After finishing my high school I was accepted at the Polymer department of the AmirKabir University of Technology to study on polymer technology.

I continued my study in polymer engineering as M.Sc student (top 18 in the public universities entrance examination for M.Sc. 2002). My master project was focused on recycling of PET bottles via melt intercalation with the aim of improving thermal and barrier properties. During the project, I became familiar with different polymer standard tests (mechanical, thermal and characterization tests, e.g., TEM, SEM, XRD, DSC...).

Later, I moved to Mapna Generator Company (Turbo Generator manufacturer) working for 4 years as an R&D engineer involved in many R&D projects as a member of a team with the aim of improving the insulation system. I got familiar with different type of insulation materials for H.V generators, R.R & VPI insulation systems of motors/ generators and electrical properties of material and their testing methods. I won the Best Employee Prize from Mapna Generator Co. on November 2009.

Being always interested in fundamental research, I decided to continue my education and I moved to study doctorate on polymer science. I did my PhD, under supervision of Prof. Jose Ramon Leiza, director of POLYMAT. I was granted with a scholarship in the framework of a European project, Marie Curie training network ITN NANOPOLY. In this project, I became skilled in modeling the microstructure of complex polymers by Monte Carlo simulations. I have coded different polymerization systems in homogeneous and heterogeneous systems including very complex systems like acrylic-polyurethane hybrid polymers synthesized by miniemulsion polymerization. I had two secondments during my PhD; in one of them I had the opportunity to learn about the commercial Predici software at Freie University of Berlin. During the second one I worked on modeling the microstructure of crosslinked polymers at BASF Company (Ludwigshafen, Germany). During my PhD I published 6 peer reviewed articles and one of the publications "Detailed Microstructure Investigation of Acrylate/Methacrylate Functional Copolymers by Kinetic Monte Carlo Simulation" was the most cited paper of the year in Macromolecular Reaction Engineering and increased the Impact Factor of the journal. My PhD thesis was awarded by the University of the Basque Country ("Premio Extraordinario de Tesis Doctorales de la UPV/EHU") as one of the top 10 dissertations in the science discipline in the 2013/2014 academic year.

After finishing my PhD, I have continued the research at Basque Center for Macromolecular Design and Engineering being a Postdoctoral fellow in a European project, RECOBA H2020-SPIRE-2014 in which I have been focused on modeling the dynamic development of the morphology of hybrid latex particles. Currently I am working as a researcher at the University of Basque Country under a proposal-based competitive grant. In addition to my own research activities I am co-supervising a PhD student with Prof. J.M. Asua and J.R. Leiza and a final year project of an undergraduate student. Furthermore, I am teaching undergrad students (4th grade students in the Chemistry grade) and master students (Master Química y Polímeros at Chemistry Faculty of the UPV/EHU) of the courses "Procesos Industriales de Polimerización" and "Polymer Reaction Engineering" as a teaching assistant for the computer simulation exercises using Predici commercial software.



General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

currently I am working as a researcher at the University of Basque Country under a proposal-based competitive grant of "Contratación para la especialización de personal investigador doctor" for 2 years. After finishing my PhD in Sep. 2014 at the University of Basque Country UPV/EHU, I moved to The Basque Center for Macromolecular Design and Engineering as a postdoctoral fellow involving in a European project RECOBA for 3 years. I also have 4 years of working experience in Industry after my Master education.

During my PhD and Postdoctoral periods, I got skilled in simulation and modelling of complex polymer architecture and polymerization processes. My broad Knowledge on both fundamental science and industrial applications will hopefully provide me the opportunity to attain a permanent academic position in the field of polymer science and engineering in the future.

General indicators based on Web of Science:

Total Articles in Publication: 21

Articles With Citation Data: 14

Sum of the Times Cited: 146

Average Citations per Article: 10.43

h-index=9

I had an oral presentations in more than 20 nacional and internacional conferences and I was a keynote lecturer (45 minutes talk) at the Polymer Reaction Engineering X (PRE 10) May 20-25, 2018.



Shaghayegh Hamzehlou

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 Name: **Shaghayegh**
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 Gender: **Female**
 Nationality: **Iran**
 Country of birth: **Iran**
 Contact province: **Gipuzkoa**
 City of birth: **Tehran**
 Contact address: **Plaza de Alkiza, 5, 2C**
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 Contact country: **Spain**
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Current professional situation

Employing entity: Universidad del País Vasco **Type of entity:** University

Professional category: Investigator

Start date: 01/05/2018

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 230403 - Composite polyimers; 230408 - Macromolecules; 230409 - Modification of macromolecules; 230410 - Monomer chemistry; 230412 - Network polymers; 230416 - Polymer analysis; 230417 - Polymers in dispersad forro; 230420 - Polystyrene; 230421 - Polyurethanes; 230423 - Synthesis of macromolecules; 230499 - Other; 230615 - Reaction mechanics; 230691 - Organic chemistry. Instrumental Analysis

Secondary (UNESCO code): 120326 - Simulation

Performed tasks: In this position I am a researcher at the University of Basque Country. Main activities in my job: Simulating and modeling of kinetics, topology, architecture and microstructure of polymers produced in different polymerization processes; Modeling the dynamic development of the morphology of hybrid polymer particles; Optimization and on-line controll of latex polymer particles; Monte Carlo simulation of complex polymerization processes; Deterministic modeling; co-supervising a PhD student with Prof. J.M. Asua and J.R. Leiza; Supervising the final project of undergraduate student; Teaching undergrad students (4th grade students in the Chemistry grade) and master students (Master Química y Polímeros at Chemistry Faculty of the UPV/EHU) of the courses "Procesos Industriales de Polimerización" and "Polymer Reaction Engineering" as a teaching assistant for the computer simulation exercises using Predici commercial software.

Previous positions and activities

	Employing entity	Professional category	Start date
1	Basque Center for Macromolecular Design and Engineering	Postdoctoral investigator	01/01/2015
2	Universidad del País Vasco	Investigator (PIC) in Erupean project LIPMID (FP7NMP-2012-2.2-6-310177)	01/01/2014
3	Universidad del País Vasco	PhD student, Marie Curie fellowship at initial training network, Nanopoly PITN-GA-2009-238700	13/09/2010
4	Mapna Generator Company	R&D engineer in polymer industry	01/03/2006

1 Employing entity: Basque Center for Macromolecular Design and Engineering **Type of entity:** R&D Centre

Professional category: Postdoctoral investigator

Start-End date: 01/01/2015 - 12/04/2018

Duration: 3 years - 3 months - 12 days

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 230403 - Composite polyiners; 230408 - Macromolecules; 230409 - Modification of macromolecules; 230410 - Monomer chemistry; 230412 - Network polymers; 230416 - Polymer analysis; 230417 - Polymers in dispersad forro; 230420 - Polystyrene; 230421 - Polyurethanes; 230423 - Synthesis of macromolecules; 230615 - Reaction mechanics; 230691 - Organic chemistry. Instrumental Analysis; 239900 - Other chemical specialties

Performed tasks: In this position I was a postdoctoral researcher of a European project named RECOBA (funding from European Framework Horizon 2020, No. 636820). Main activities in my job: Simulating and modeling of kinetics, topology, architecture and microstructure of polymers produced in different polymerization processes; Modeling the dynamic development of the morphology of hybrid polymer particles; Optimization and on-line controll of latex polymer particles; Monte Carlo simulation of complex polymerization processes; Determinestic modeling; co-supervising a PhD student with Prof. J.M. Asua and J.R. Leiza; Teaching undergrad students (4thgrade students in the Chemistry grade) and master students (Master Química y Polímeros at Chemistry Faculty of the UPV/EHU) of the courses "Procesos Industriales de Polimerización" and "Polymer Reaction Engineering" as a teaching assistant for the computer simulation exercises using Predici commercial software.

2 Employing entity: Universidad del País Vasco **Type of entity:** University

Department: Química Aplicada, Facultad de Ciencias Químicas, Universidad del Pais Vasco, Euskal Herriko Unibertsitatea

City employing entity: Donostia San Sebastian, Basque Country, Spain

Professional category: Investigator (PIC) in Erupean project LIPMID (FP7NMP-2012-2.2-6-310177)

Email: shaghayegh.hamzehlou@ehu.es

Start-End date: 01/01/2014 - 30/06/2014

Duration: 6 months

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 120326 - Simulation; 230408 - Macromolecules; 230409 - Modification of macromolecules; 230412 - Network polymers; 230416 - Polymer analysis; 230417 - Polymers in dispersad forro; 230420 - Polystyrene; 230421 - Polyurethanes; 230423 - Synthesis of macromolecules

Performed tasks: modeling the microstructure of complex polymers by Monte Carlo simulations; Coded different polymerization systems in homogeneous and heterogeneous systems including very complex systems like acrylic-polyurethane hybrid polymers synthesized by miniemulsion polymerization.

3 Employing entity: Universidad del País Vasco **Type of entity:** University

Department: Química Aplicada, Facultad de Ciencias Químicas, Universidad del Pais Vasco, Euskal Herriko Unibertsitatea

City employing entity: Donostia San Sebastian, Basque Country, Spain

Professional category: PhD student, Marie Curie **Educational Management (Yes/No):** Yes
fellowship at initial training network, Nanopoly
PITN-GA-2009-238700

Email: shaghayegh.hamzehlou@ehu.es

Start-End date: 13/09/2010 - 13/09/2013

Duration: 3 years

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 120326 - Simulation; 230403 - Composite polyimers; 230408 - Macromolecules; 230412 - Network polymers; 230416 - Polymer analysis; 230417 - Polymers in dispersad forro; 230420 - Polystyrene; 230421 - Polyurethanes

Performed tasks: Marie Curie fellowship at initial training network, Nanopoly PITN-GA-2009-238700. PhD thesis: " Modeling the Kinetics and Architecture of Complex Polymerization Processes: A Kinetic Monte Carlo Simulation"

4 **Employing entity:** Mapna Generator Company **Type of entity:** Manufacturing Company

Department: Engineering department

City employing entity: Karaj, Iran

Professional category: R&D engineer in polymer **Educational Management (Yes/No):** No
industry

Start-End date: 01/03/2006 - 30/08/2010

Duration: 3 years - 6 months

Type of contract: Temporary employment contract

Dedication regime: Part time

Primary (UNESCO code): 230403 - Composite polyimers; 230408 - Macromolecules; 230409 - Modification of macromolecules; 230416 - Polymer analysis; 230423 - Synthesis of macromolecules; 230424 - Synthetic fibres; 230499 - Other

Performed tasks: working for 4 years as an R&D engineer involved in many R&D projects as a member of a team with the aim of improving the insulation system. I got familiar with different type of insulation materials for H.V generators, R.R & VPI insulation systems of motors/ generators and electrical properties of material and their testing methods.



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

1 University degree: Master

Name of qualification: Polymer Industry Engineering

City degree awarding entity: Tehran, Iran

Degree awarding entity: Amir Kabir University of Technology (Poly Technique of Tehran) **Type of entity:** University

Date of qualification: 02/2006

Average mark: Excellent

Standardised degree: Yes

2 University degree: Higher degree

Name of qualification: Polymer Industry Engineering

City degree awarding entity: Tehran, Iran

Degree awarding entity: Amir Kabir University of Technology (Poly Technique of Tehran) **Type of entity:** University

Date of qualification: 09/2003

Average mark: Good

Standardised degree: No

Doctorates

Doctorate programme: Programa Oficial de Doctorado en Química Aplicada y Materiales Poliméricos

Degree awarding entity: Universidad del País Vasco/Euskal Herriko Unibertsitatea

City degree awarding entity: Leioa, Basque Country, Spain

Date of degree: 19/09/2014

Thesis title: Modeling the Kinetics and Architecture of Complex Polymerization Processes: A Kinetic Monte Carlo Simulation

Thesis director: Jose Ramon Leiza

Thesis co-director: Yuri Reyes Mercado

Obtained qualification: Cum Laude Sobresaliente (Doctorado Internacional)

Special doctorate award: Yes

Date of award: 24/06/2016

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1** **Type of training:** Course
Training title: How to write successful H2020 proposals (with special focus on impact)
City awarding entity: Bilbao, Spain
Awarding entity: Universidad del País Vasco
End date: 12/12/2019
Type of entity: University
Duration in hours: 4 hours
- 2** **Type of training:** Summer School
Training title: Nanopoly Summer School
City awarding entity: Porto, Portugal
Awarding entity: University of Porto
End date: 09/2012
Duration in hours: 40 hours
- 3** **Type of training:** Course
Training title: Concepts of Stimuli-Responsive Membranes and Materials
City awarding entity: Donostia-San Sebastián,
Awarding entity: Universidad del País Vasco
End date: 22/06/2012
Type of entity: University
Duration in hours: 18 hours
- 4** **Type of training:** Course
Training title: Course on Anionic Polymerization
City awarding entity: Donostia San Sebastian, Spain
Awarding entity: Instituto Universitario de Materiales Poliméricos , POLYMAT
Training manager: Prof. P. Quirk
End date: 05/05/2011
Duration in hours: 80 hours
- 5** **Type of training:** Practical work
Training title: Workshop of Predici Commercial Software
City awarding entity: Berlin, Germany
Awarding entity: Computing in Technology GmbH(CIT)
Training manager: Dr. M. Wulkow
End date: 2011
Duration in hours: 24 hours
- 6** **Type of training:** Course
Training title: BASF days -Nature loves chemistry
City awarding entity: Ludwigshafen, Alemania,
Awarding entity: BASF Company
End date: 22/10/2010
Type of entity: Business
Duration in hours: 20 hours
- 7** **Type of training:** Course
Training title: Course on Emulsion Polymerization Processes
City awarding entity: Donostia San Sebastian, Spain
Awarding entity: Instituto Universitario de Materiales Poliméricos, POLYMAT
End date: 10/09/2010
Duration in hours: 40 hours



- 8 Training title:** Introduction to Occupational Health and Safety Management System (OHSAS 18001:2007)
City awarding entity: Karaj, Iran
Awarding entity: Mapna Generator Company
End date: 2009 **Duration in hours:** 8 hours
- 9 Type of training:** Practical work
Training title: Engineering Training stator bar insulation (Practice)
City awarding entity: Erfurt, Germany
Awarding entity: Siemens PG Company **Type of entity:** manufacturing Company
End date: 16/02/2007 **Duration in hours:** 40 hours
- 10 Type of training:** Practical work
Training title: Engineering Training Rotor and stator insulation (Practice) incoming goods inspections
City awarding entity: Mülheim, Germany
Awarding entity: Siemens PG Company **Type of entity:** manufacturing Company
End date: 09/02/2007 **Duration in hours:** 40 hours
- 11 Type of training:** Course
Training title: Engineering Training Rotor and stator insulation (Theory)
City awarding entity: Mülheim, Germany
Awarding entity: Siemens PG Company **Type of entity:** manufacturing Company
End date: 02/02/2007 **Duration in hours:** 40 hours
- 12 Training title:** training course on the subject of ISO 14001:2004
Awarding entity: Mapna Generator Company
End date: 2007 **Duration in hours:** 8 hours

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
Spanish	C1	C1	C1	C1	C1
English	C1	C1	C1	C1	C1
Persian	C2	C2	C2	C2	C2

Teaching experience

General teaching experience

- 1 Type of teaching:** Official teaching
Name of the course: Procesos Industriales de Polimerización
Related skills: Teacher assistant for Predici Software workshop
Type of programme: Bachelor's degree **Type of teaching:** Practical work (classroom-problems)
Type of subject: Optional
University degree: Chemistry
Frequency of the activity: 3
Type of hours/ ECTS credits: Credits
Hours/ECTS credits: 1,2



City of entity: Donostia San Sebastian, Basque Country, Spain

Subject language: Spanish

2 Type of teaching: Official teaching

Name of the course: Polymer Reaction Engineering

Related skills: Teacher assistant for Predici Software workshop

Type of programme: Master's degree

Type of teaching: Practical work (classroom-problems)

Type of subject: Optional

University degree: Polymer Chemistry

Frequency of the activity: 3

Type of hours/ ECTS credits: Credits

Hours/ECTS credits: 1,2

City of entity: Donostia San Sebastian, Basque Country, Spain

Subject language: English

Experience supervising doctoral thesis and/or final year projects

Project title: Final year Project of Chemistry grade :Effect of the chain length of hydrophobes on Ostwald ripening and stability of the miniemulsion and on its popolymerization Starting date: 2/10/2018

Type of project: End of course project

Co-director of thesis: Maria Paulis

Student: Sara PAVO BELDARRAIN

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1 Name of the project: Postdoctoral competitive grant from University of the Basque Country (UPV/EHU) for the "Contratación para la especialización de personal investigador doctor"

Type of project: Basic research (including archaeological digs, etc)

Geographical area: National

Degree of contribution: Researcher

Entity where project took place: Universidad del País Vasco

Type of entity: University

City of entity: Donostia San Sebastian, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Shaghayegh Hamzehlou

Type of participation: Principal investigator

Start-End date: 01/05/2018 - 01/05/2020

Duration: 2 years

Dedication regime: Full time

2 Name of the project: RECOBA H2020-SPIRE-2014

Type of project: Demonstration, pilot projects, conceptual formulations and design of processes and services

Geographical area: European Union

Degree of contribution: Researcher



Entity where project took place: Universidad del País Vasco **Type of entity:** University

City of entity: Donostia San Sebastian, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Jose Maria Asua

Type of participation: Team member

Name of the programme: H2020-LEIT-NMPB

Code according to the funding entity: Horizon 2020 (2014-2020) under grant agreement no. 636820

Start-End date: 01/01/2015 - 30/12/2017

Duration: 3 years

Dedication regime: Full time

3 **Name of the project:** ITN NANOPOLY ITN Marie Curie

Type of project: Basic research (including archaeological digs, etc)

Geographical area: European Union

Degree of contribution: Researcher

Entity where project took place: Universidad del País Vasco **Type of entity:** University

City of entity: Donostia San Sebastian, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Jose Ramon Leiza

Type of participation: Team member

Name of the programme: Marie Curie initial training network

Code according to the funding entity: Nanopoly PITN-GA-2009-238700

Start-End date: 01/09/2010 - 30/09/2013

Duration: 3 years

Dedication regime: Full time

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1 Wolfgang Gerlinger; Jose Maria Asua; Tomas Chaloupka; Johannes M.M. Faust; Fredrik Gjertsen; Shaghayegh Hamzehlou; Svein Olav Hauger; Ekkehard Jahns; Preet J. Joy; Juraj Kosek; Alexei Lapkin; Jose Ramon Leiza; Adel Mhamdi; Alexander Mitsos; Omar Naeem; Noushin Rajabalinia; Peter Singstad; John Suberu. Dynamic Optimization and Non-linear Model Predictive Control to Achieve Targeted Particle Morphologies. Chemie-Ingenieur-Technik. 91 - 3, pp. <https://doi.org/10.1002/cite.201800118>. 2019.

Type of production: Scientific paper

- 2 Johannes M.M. Faust; Shaghayegh Hamzehlou; Jose R. Leiza; José M. Asua; Adel Mhamdi; Alexander Mitsos. Dynamic optimization of a two-stage emulsion polymerization to obtain desired particle morphologies. Chemical Engineering Journal. 359, pp. 1035 - 1045. 2019.

Type of production: Scientific paper

Impact source: SCOPUS

Impact index in year of publication: 6.735

- 3 Noushin Rajabalinia; Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua. Experimental validation of a mathematical model for the evolution of the particle morphology of waterborne polymer-polymer hybrids: paving the way to the design and implementation of optimal polymerization strategies. Chemical Engineering Journal. pp. <https://doi.org/10.1016/j.cej.2019.01.140>. 2019.

Type of production: Scientific paper



Corresponding author: No

Impact source: SCOPUS

Impact index in year of publication: 6.735

- 4** Iñaki Emaldi; Shaghayegh Hamzehlou; Edurne Erkizia; Jorge Sanchez Dolado; Agustin Etxeberria; Jose Ramon Leiza. Modelling and control of the microstructure of comb-like poly(MAA-co-PEGMA) water-soluble copolymers. Polymer Chemistry. 10.1039/C8PY01599F, 2019.

Type of production: Scientific paper

Impact source: SCOPUS

Impact index in year of publication: 4.927

- 5** Shaghayegh Hamzehlou; Miren Aguirre; Jose R. Leiza; Jose M. Asua. Dynamics of the Particle Morphology during the Synthesis of Waterborne Polymer-Inorganic Hybrids. Macromolecules. 50 - 18, pp. 7190 - 7201. 2017.

Type of production: Scientific paper

Corresponding author: No

Impact source: SCOPUS

Impact index in year of publication: 5.914

Source of citations: SCOPUS

Citations: 3

- 6** Inaki Emaldi; Shaghayegh Hamzehlou; Jorge Sanchez-Dolado; Jose R. Leiza. Kinetics of the aqueous-phase copolymerization of MAA and PEGMA macromonomer: Influence of monomer concentration and side chain length of PEGMA. Processes. 5 - 2, pp. doi:10.3390/pr5020019. 2017.

Type of production: Scientific paper

Corresponding author: No

Source of citations: SCOPUS

Citations: 2

- 7** Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua. A new approach for mathematical modeling of the dynamic development of particle morphology. Chemical Engineering Journal. 304, pp. 655 - 666. 2016.

Type of production: Scientific paper

Impact source: SCOPUS

Impact index in year of publication: 6.735

Source of citations: SCOPUS

Citations: 9

- 8** Shaghayegh Hamzehlou; Nicholas Ballard; Yuri Reyes; Amia Aguirre; Jose Maria Asua; Jose Ramon Leiza. Analyzing the discrepancies in the activation energies of the backbiting and β -scission reactions in the radical polymerization of n-butyl acrylate. Polymer Chemistry. 7 - 11, pp. 2069 - 2077. 2016.

Type of production: Scientific paper

Impact source: SCOPUS

Impact index in year of publication: 4.927

Source of citations: SCOPUS

Citations: 14

- 9** Nicholas Ballard; Shaghayegh Hamzehlou; Jose Maria Asua. Intermolecular Transfer to Polymer in the Radical Polymerization of n-Butyl Acrylate. Macromolecules. 49 - 15, pp. 5418 - 5426. 2016.

Type of production: Scientific paper

Corresponding author: No

Impact source: SCOPUS

Impact index in year of publication: 5.914

**Source of citations:** SCOPUS**Citations:** 9

- 10** N. Ballard; S. Hamzehlou; F. Ruipérez; J.M. Asua. On the Termination Mechanism in the Radical Polymerization of Acrylates. *Macromolecular Rapid Communications*. 37 - 16, pp. 1364 - 1368. 2016.

Type of production: Scientific paper**Corresponding author:** No**Impact source:** SCOPUS**Impact index in year of publication:** 4.441**Source of citations:** SCOPUS**Citations:** 13

- 11** Shaghayegh Hamzehlou; Yuri Reyes; Jose Ramon Leiza. Quantitative study on the homogeneity of networks synthesized by nitroxide-mediated radical copolymerization of styrene and divinylbenzene. *European Polymer Journal*. 85, pp. 244 - 255. 2016.

Type of production: Scientific paper**Corresponding author:** No**Impact source:** SCOPUS**Impact index in year of publication:** 3.741**Source of citations:** SCOPUS**Citations:** 2

- 12** S. Lazzari; S. Hamzehlou; Y. Reyes; J.R. Leiza; M.R.P.F.N. Costa; R.C.S. Dias; G. Storti. Bulk Crosslinking Copolymerization: Comparison of Different Modeling Approaches. *Macromolecular Reaction Engineering*. 8 - 10, pp. 678 - 695. 2014.

Type of production: Scientific paper**Source of citations:** SCOPUS**Citations:** 10

- 13** Shaghayegh Hamzehlou; Yuri Reyes; Robin Hutchinson; Jose Ramon Leiza. Copolymerization of n-butyl acrylate and styrene: Terminal Vs penultimate model. *Macromolecular Chemistry and Physics*. 215 - 17, pp. 1668 - 1678. 2014.

Type of production: Scientific paper**Corresponding author:** No**Impact source:** SCOPUS**Impact index in year of publication:** 2.492**Source of citations:** SCOPUS**Citations:** 6

- 14** Shaghayegh Hamzehlou; Nicholas Ballard; Paula Carretero; Maria Paulis; Jose M. Asua; Yuri Reyes; Jose Ramon Leiza. Mechanistic investigation of the simultaneous addition and free-radical polymerization in batch miniemulsion droplets: Monte Carlo simulation versus experimental data in polyurethane/acrylic systems. *Polymer*. 55 - 19, pp. 4801 - 4811. 2014.

Type of production: Scientific paper**Corresponding author:** No**Impact source:** SCOPUS**Impact index in year of publication:** 3.483**Source of citations:** SCOPUS**Citations:** 17

- 15** Shaghayegh Hamzehlou; Yuri Reyes; Jose Ramon Leiza. Modeling the mini-emulsion copolymerization of N-butyl acrylate with a water-soluble monomer: A Monte Carlo approach. Industrial and Engineering Chemistry Research. 53 - 22, pp. 8996 - 9003. 2014.
Type of production: Scientific paper
Corresponding author: No
Impact source: SCOPUS
Impact index in year of publication: 3.141
Source of citations: SCOPUS **Citations:** 13
- 16** Shaghayegh Hamzehlou; Yuri Reyes; Jose Ramon Leiza. A new insight into the formation of polymer networks: A kinetic monte carlo simulation of the cross-linking polymerization of S/DVB. Macromolecules. 46 - 22, pp. 9064 - 9073. 2013.
Type of production: Scientific paper
Corresponding author: No
Impact source: SCOPUS
Impact index in year of publication: 5.914
Source of citations: SCOPUS **Citations:** 24
- 17** Shaghayegh Hamzehlou; Yuri Reyes; Jose Ramon Leiza. Detailed Microstructure Investigation of Acrylate/Methacrylate Functional Copolymers by Kinetic Monte Carlo Simulation. Macromolecular Reaction Engineering. 6 - 8, pp. 319 - 329. 2012.
Type of production: Scientific paper
Corresponding author: No
Source of citations: SCOPUS **Citations:** 24
- 18** Shaghayegh Hamzehlou; A.A. Katbab. Bottle-to-bottle recycling of pet via nanostructure formation by melt intercalation in twin screw compounder: improved thermal, barrier, and microbiological properties. Journal of Applied Polymer Science. 106 - 2, pp. 1375 - 1382. 2007.
Type of production: Scientific paper
Source of citations: SCOPUS **Citations:** 18
- 19** Shaghayegh Hamzehlou; Jose Ramon Leiza. Morphology of composite polymer latexes: An update on synthesis and applications, modeling, and characterization. Advances in Polymer Science. 281, pp. 105 - 141. 2018.
Type of production: Book chapter **Format:** Book
Corresponding author: Yes
Source of citations: SCOPUS **Citations:** 1
- 20** M. Demiquel-Ramos; G. Rughoobur; N. Rajabalina; Shaghayegh Hamzehlou; J.M Escolano; E. Iborra; A.J. Flewitt. Sensors based on thin film bulk acoustic wave resonators: From fabrication to applications in chemical and biological analysis. Proceedings of the International Display Workshops. 2, pp. 1312 - 1314. 2017.
Type of production: conference-paper
Corresponding author: No
- 21** L. Seda; E. Jahns; A. Mhamdi; A. Mitsos; P. Joy; S. Hamzehlou; J.R. Leiza; J.M. Asua; N. Rajabalina; J. Kosek; T. Chaloupka; M. Kroupa; M. De Miguel-Ramos; A.J. Flewitt; A. Lapkin; J. Suberu; F. Gjertsen; P. Singstad. EU project RECOBA: Expected impact and an overview about progress in advanced process control of emulsion copolymerization. 22nd International Congress of Chemical and Process Engineering, CHISA 2016 and 19th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, PRES 2016. 2, pp. 922 - 923. 2016.

Type of production: conference-paper

Corresponding author: No

Works submitted to national or international conferences

- 1** **Title of the work:** Quantitative characterization of the morphology of structured composite polymer particles by 3D TEM
Name of the conference: 23rd International Conference of Chemical and Process Engineering (CHISA)2018
Type of event: Conference
Type of participation: 'Participatory - poster
City of event: Prague, Czech Republic
Date of event: 25/08/2018
End date: 29/08/2018
N. Rajabalina; S. Hamzehlou; E. Modin; A. Chuvilin; J.R. Leiza; J. M. Asua.
- 2** **Title of the work:** Modeling and characterization of the morphology of multiphase polymeric nanoparticles
Name of the conference: Polymer Reaction Engineering Conference X
Type of event: Conference
Type of participation: Participatory - invited/keynote talk
City of event: Punta Cana, Dominican Republic
Date of event: 20/05/2018
End date: 25/05/2018
Organising entity: ECI Conference
S. Hamzehlou; N. Rajabalina; E. Modin; A. Chuvilin; J.R. Leiza; J.M. Asua.
- 3** **Title of the work:** Modeling the Dynamics of the Particle Morphology during the Synthesis of Structured Polymer Latex Particles
Name of the conference: Tackeling the Future of Plant Operation Jointly Towards a Digital Process Industry
Corresponding author: Yes
City of event: Barcelona, Spain
Date of event: 13/12/2017
End date: 14/12/2017
Organising entity: SPIRE PROJECT
Hamzehlou Shaghayegh; Rajabalina Noushin; Leiza Jose Ramon; Asua Jose Maria.
- 4** **Title of the work:** Effect of reaction variables on morphology of structured polymer nanoparticles via seeded emulsion polymerization
Name of the conference: International Polymer Colloids Group Conference (IPCG 2017)
Type of event: Conference
Type of participation: 'Participatory - poster
City of event: Arantzazu, Spain
Date of event: 25/06/2017
End date: 30/06/2017
Organising entity: International Polymer Colloid Group
Noushin Rajabalina; Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.



- 5** **Title of the work:** An innovative and fast mathematical model for prediction and control of dynamic development of latex particle
Name of the conference: KoMSO Challenge Workshop-Challenges for Mathematical Modeling, Simulation and Optimization for
Type of event: Workshop
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Heidelberg, Germany
Date of event: 09/02/2017
End date: 10/02/2017
Organising entity: Heidelberg University
Noushin Rajabalinia; Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.
- 6** **Title of the work:** An innovative and fast mathematical model for prediction and control of dynamic development of latex particle
Name of the conference: SPIRE 1-2014 public workshop
Type of event: Workshop
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Frankfurt, Germany
Date of event: 25/01/2017
Organising entity: EU projects
Shaghayegh Hamzehlou; Noushin Rajabalinia; Jose Ramon Leiza; Jose Maria Asua.
- 7** **Title of the work:** Latex particle morphology modeling
Name of the conference: RECOBA modeling workshop and review meeting
Type of event: Meeting
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Prague, Czech Republic
Date of event: 18/01/2017
End date: 18/01/2017
Organising entity: Czech Technical University **Type of entity:** University
Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.
- 8** **Title of the work:** Strategies to produce copolymers of MAA and PEGMA macromonomers in aqueous solution polymerization with controlled composition and molar masses
Name of the conference: XIV Meeting of the Group of Polymers of the Spanish Royal Chemistry and Royal Physics Societies(GEP-2016)
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: No
City of event: Burgos, Spain
Date of event: 09/2016
Iñaki Emaldi; Shaghayegh Hamzehlou; Jorge Sánchez Dolado; Jose Ramon Leiza.
- 9** **Title of the work:** Study the effect of reaction condition on the morphology of structured polymer particles in latexes
Name of the conference: XIV Meeting of the Group of Polymers of the Spanish Royal Chemistry and Royal Physics Societies(GEP-2016)
Type of event: Conference
Type of participation: Participatory - oral communication



Corresponding author: No

City of event: Burgos, Spain

Date of event: 09/2016

Noushin Rajabalinia; Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.

10 Title of the work: Mathematical Modeling of The Dynamic Development of Particle Morphology

Name of the conference: 16th Industrial Liaison Program (ILP) meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: San Sebastian, Spain

Date of event: 09/2016

Organising entity: University of Basque Country

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

11 Title of the work: New components of process models

Name of the conference: RECOBA review meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Aachen, Germany

Date of event: 06/2016

Organising entity: RWTH Aachen university

Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.

12 Title of the work: A new approach for mathematical modelling of the dynamic development of particle morphology

Name of the conference: 12th International Wokshop on Polymer Reaction Engineering

Type of event: Conference

Type of participation: 'Participatory - poster

Corresponding author: Yes

City of event: Hamburg, Germany

Date of event: 05/2016

Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.

13 Title of the work: Role of POLYMAT in Recoba: Mathematical Modeling of The Dynamic Development of Particle Morphology

Name of the conference: 2nd RECOBA board meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Cambridge, United Kingdom

Date of event: 01/2016

Organising entity: University of Cambridge

Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.

14 Title of the work: Morphology evolution model

Name of the conference: RECOBA polymerization modeling and CENIT training workshop

Type of event: Workshop

Type of participation: Participatory - oral communication

Corresponding author: Yes



City of event: Trondheim, Norway
Date of event: 11/2015
Organising entity: Cybernetica company
Shaghayegh Hamzehlou.

- 15** **Title of the work:** Development of a process strategy for production of emulsifier-free industrial-like waterborne polymers
Name of the conference: European Symposium on Chemical Reaction Engineering ESCRE 2015
Type of event: Conference
Type of participation: 'Participatory - poster
Corresponding author: No
City of event: Munich, Germany
Date of event: 10/2015
Sevilay Bilgin; Shaghayegh Hamzehlou; Radmila Tomovska; Jose Maria Asua.
- 16** **Title of the work:** Role of POLYMAT in Recoba: Mathematical Modeling of The Dynamic Development of Particle Morphology
Name of the conference: RECOBA 1st exploitation board meeting
Type of event: Meeting
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: San Sebastian, Spain
Date of event: 06/2015
Organising entity: Institute for Polymer Materials
Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.
- 17** **Title of the work:** Monte Carlo: A Versatile Tool for Modeling Complex Polymerization Processes
Name of the conference: Polymer Reaction Engineering IX conference
Type of event: Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Cancun, Mexico
Date of event: 05/2015
Shaghayegh Hamzehlou; Yuir Reyes Mercado; Jose Ramon Leiza.
- 18** **Title of the work:** Role of POLYMAT in Recoba: Mathematical Modeling of The Dynamic Development of Particle Morphology
Name of the conference: RECOBA kick-off meeting
Type of event: Meeting
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Brussels, Belgium
Date of event: 01/2015
Organising entity: EU
Shaghayegh Hamzehlou; Jose Ramon Leiza; Jose Maria Asua.
- 19** **Title of the work:** Simultaneous Addition and Free-Radical Polymerization in Batch Miniemulsion Droplets: Monte Carlo Simulation
Name of the conference: Working Party on Polymer Reaction Engineering
Type of event: Conference
Type of participation: Participatory - oral communication



Corresponding author: Yes

City of event: San Sebastian, Spain

Date of event: 09/2014

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

- 20 Title of the work:** Simultaneous Addition and Free-Radical Polymerization in Batch Miniemulsion Droplets: Monte Carlo simulation vs Experimental data in PU/Acrylic systems

Name of the conference: 14th Industrial Liaison Program (ILP) meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: San Sebastian, Spain

Date of event: 09/2014

Organising entity: University of Basque Country

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

- 21 Title of the work:** A new insight into the development of polymer networks microstructure: a kinetic Monte Carlo approach

Name of the conference: 13th Industrial Liaison Program (ILP) meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Donostia San Sebastian, Spain

Date of event: 09/2013

Organising entity: University of Basque Country

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

- 22 Title of the work:** Hybrid Models for Tailoring NANO-Architectures of POLYmers

Name of the conference: Final Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

City of event: Potsdam, Germany

Date of event: 09/2013

Organising entity: Freie University of Berlin

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

- 23 Title of the work:** Copolymerization of n-butyl acrylate and styrene: terminal vs. penultimate model and the effect of backbiting

Name of the conference: Working Party on Polymer Reaction Engineering

Type of event: Conference

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Hamburg, Germany

Date of event: 05/2013

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

- 24 Title of the work:** Microstructure Study of St/DVB Benchmark System: Kinetic Monte Carlo Simulation

Name of the conference: 5th Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes



City of event: Zurich, Switzerland

Date of event: 04/2013

Organising entity: ETH Hoenggerberg

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

25 Title of the work: Detailed Modeling of the Microstructure of Acrylic Copolymer by Monte Carlo Simulation: Homogeneous and Heterogeneous Polymerizations

Name of the conference: Working Party on Polymer Reaction Engineering

Type of event: Conference

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Lyon, France

Date of event: 10/2012

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

26 Title of the work: Detailed Modeling of the Microstructure of Acrylic Copolymer by Monte Carlo Simulation: Homogeneous and Heterogeneous Polymerizations

Name of the conference: 4th Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Porto, Portugal

Date of event: 09/2012

Organising entity: Universidade do Porto

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

27 Title of the work: Detailed Modeling of the Microstructure of Acrylic Copolymer by Monte Carlo Simulation: Homogeneous and Heterogeneous Polymerizations

Name of the conference: 12th Industrial Liaison Program (ILP) meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Donostia San Sebastian, Spain

Date of event: 09/2012

Organising entity: University of Basque Country

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

28 Title of the work: Detailed microstructure investigation of homo and copolymers of acrylate monomers by kinetic Monte Carlo simulation

Name of the conference: Polymer Reaction Engineering VIII conference

Type of event: Conference

Type of participation: Participatory - poster

Corresponding author: Yes

City of event: Cancun, Mexico

Date of event: 05/2012

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

29 Title of the work: Microstructure Simulation of Acrylic-Polyurethane Nano-Hybrids: A Kinetic Monte Carlo Study of Acrylic Copolymers In Miniemulsion

Name of the conference: 3rd Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Prague, Czech Republic

Date of event: 04/2012

Organising entity: Institute of macromolecular chemistry of the Academy of Sciences of CZ
Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

30 Title of the work: Microstructure Simulation of Acrylic-Polyurethane Nano-Hybrids: A Kinetic Monte Carlo Study of the acrylic Copolymer

Name of the conference: Mid Term Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Ludwigshafen, Germany

Date of event: 11/2011

Organising entity: BASF Company

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

31 Title of the work: Microstructure Simulation of Acrylic-Polyurethane Nano-Hybrids: A Kinetic Monte Carlo Study

Name of the conference: 2nd Nanopoly Progress meeting

Type of event: Meeting

Type of participation: Participatory - oral communication

Corresponding author: Yes

City of event: Donostia San Sebastian, Spain

Date of event: 05/2011

Organising entity: University of Basque Country

Shaghayegh Hamzehlou; Yuri Reyes Mercado; Jose Ramon Leiza.

Other achievements

Stays in public or private R&D centres

1 Entity: BASF company **Type of entity:** Business
City of entity: Ludwigshafen, Rheinhessen-Pfalz, Germany
Start-End date: 20/01/2013 - 28/02/2013 **Duration:** 1 month - 7 days
Goals of the stay: Marie Curie ITN Nanopoly secondment
Acquired skills developed: modeling crosslinked polymerization

2 Entity: Freie University of Berlin
City of entity: Berlin, Germany
Start-End date: 01/10/2012 - 30/11/2012 **Duration:** 2 months
Goals of the stay: Marie Curie ITN Nanopoly secondment
Acquired skills developed: modeling emulsion polymerization in Predici Software



Prizes, mentions and distinctions

- 1** **Description:** Prize of “Tesis extraordinario de doctorado” (the extraordinary doctorate thesis) of 2013/2014
Awarding entity: Universidad del País Vasco **Type of entity:** University
City awarding entity: Spain
Conferral date: 24/06/2014
- 2** **Description:** Best Employee Prize
Awarding entity: Mapna Generator Company **Type of entity:** Company
City awarding entity: Karaj, Iran
Conferral date: 11/2009

Summary of other achievements

- 1** **Description of the achievement:** Keynote Lecturer (45 minutes talk) at the Polymer Reaction Engineering X (PRE 10) May 20-25, 2018
Conferral date: 24/05/2018
- 2** **Description of the achievement:** Awarded by proposal-based competitive grant of "Contratación para la especialización de personal investigador doctor" for 2 years.
Conferral date: 01/05/2018
- 3** **Description of the achievement:** Most cited paper of the year in Macromolecular Reaction Engineering Journal
Conferral date: 09/2015