REGISTRATION FORM (deadline for registration July 31, 2026)

Mr., Ms., Dr., Prof. (circle one)

First Name:_____

Family Name:_____

Organization/Institution:_____

VAT Number/Tax Id. Number of your company: _____

Address:_____

_____**Postal Code:**_____

City:_____ **Country:**_____

E-mail:_____

Phone:_____

FEES (Early registration till July 31, 2026)

❑ **Attendance+ printed workshop notes** _____1,600 €

Late registration (after July 31, 2026) will have a charge of 100 € in the registration fee.

Emulsion polymers are truly "products by process" materials, whose properties are determined during the polymerization process. The workshop will focus on the understanding of the fundamental basis of emulsion polymerization and on the use of this understanding to manipulate process conditions to achieve a consistent production of improved products. The fundamentals of latex rheology and film formation, key aspects in the application of emulsion polymers will also be studied.

For more information, please contact:

Ms. Inés Plaza

POLYMAT, Joxe Mari Korta Center

University of the Basque Country, UPV/EHU

Donostia / San Sebastián, 20018, SPAIN

Phone: +34-943-018462

E-mail: eppworkshop@ehu.es

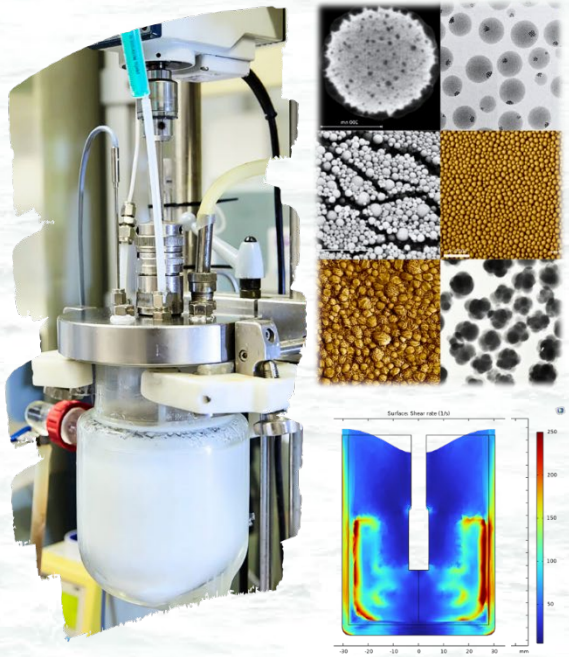
Or visit our web site (including on-line registration)**:**

http://www.ehu.eus/en/web/polymat/epp-workshop

EHU | POLYMAT Material Polimerikoen Institutua / Instituto de Materiales Poliméricos

Workshop on

EMULSION POLYMERIZATION PROCESSES



September 7-11, 2026

PROGRAM AND WORKSHOP OUTLINE

Monday September 7, 2026

9.00-9.30 Registration
9.30-10.30 Features of Emulsion Polymerization *(Prof. Nicholas Ballard, POLYMAT)*
Processes occurring in emulsion polymerization. Similarities and differences with other polymerization techniques in dispersed media (miniemulsion, microemulsion and dispersion polymerization). Reactors. Applications of polymer dispersions.
10.30- 11.00 Coffee Break
11.00-13.00 Kinetics of Emulsion Polymerization (*Prof. Shaghayegh Hamzehlou, POLYMAT*)
Factors affecting polymerization rate. Radical entry: processes involved; effects of water solubility of monomers and initiators, characteristics of the surface of the polymer particles. Radicals exit: processes involved; factors affecting radical exit (water solubility of monomers and initiators, particle size, characteristics of the surface of the polymer particles). Radical termination. Average number of radicals/particle. Monomer partitioning: thermodynamically controlled systems; mass transfer limitations.
13.00-14.30 Lunch
14.30-15.30 Seminar on kinetic measurements *(Prof. Aitor Barquero, POLYMAT)*
How to run an experiment. Determination of kinetic measurements from experiments.
15.30-16.30 Visit to POLYMAT laboratories

Tuesday, September 8, 2026

9.00-11.00 Stability of Polymer Colloids *(Prof. Edurne Gonzalez, POLYMAT)*
Colloidal stability. Mechanisms affecting dispersion stability. Electrostatic stabilization. Overcharging. Steric stabilization. Total potential energy of interaction. Flocculation of systems sterically stabilized. Electrosteric stabilization. Aggregation kinetics.
11.00-11.30 Coffee Break
11.30-13.00 Particle Nucleation and Particle Size Distribution (*Prof. Radmila Tomovska, POLYMAT*)
Description of the mechanisms for particle nucleation. Particle size distribution. Effect of the formulation and process conditions.
13.00-14.30 Lunch
14.30-15.30 Miniemulsion Polymerization *(Prof. Miren Aguirre, POLYMAT)*
Scientific basis for the preparation of monomer miniemulsions: homogenization; thermodynamic and kinetic stabilization. Effect of preparation conditions and of the miniemulsion formulation on the polymerization. Applications.
15.30-16.30 Latex Rheology *(Prof. Nicholas Ballard, POLYMAT)*
Key aspects affecting the viscosity of waterborne polymer dispersions. Equations for dispersion viscosity Thickeners.
20.00 Conference dinner

Wednesday, September 9, 2026

9.00-11.00 Molecular Weight Distribution (*Prof. José R. Leiza, POLYMAT)*
Introduction. MWD in linear polymerization: Rigorous modelling compartmentalization, MWD for a 0-1 system. MWD in non-linear systems: computation of sol MWD and gel content. Numerical and experimental examples.
11.00-11.30 Coffee Break
11.30-13.00 Particle Morphology (Prof. Radmila Tomovska, POLYMAT)
Thermodynamic and kinetic aspects for particle morphology control.
13.00-15.00 Lunch
15.00-16.30 Advanced Research Topics: Bases and Applications of CFRP in Dispersed Media I (Prof. Franck D'Agosto, CNRS, Laboratoire de Chimie et Procédés de Polymérisation).
Bases and applications of controlled/living radical polymerisations (CFRP).
16.30-17.00 Coffee Break
17.00-18.00 Advanced Research Topics: Bases and Applications of CFRP in Dispersed Media II (Prof. Franck D'Agosto, CNRS, Laboratoire de Chimie et Procédés de Polymérisation).
Challenges for adapting CFRP to water dispersions. Emphasis on future opportunities and open issues.

Thursday, September 10, 2026

9.00-10.30 Emulsion Polymerization Reactors (I) *(Prof. María Paulis, POLYMAT)*
Reactor types. Reactor equipment for mixing. Power consumption. Agitation requirements for emulsion polymerization. Mass transfer limitations. Heat transfer. Predicting the performance of emulsion polymerization reactors: Mass, energy and population balances. Evolution of characteristics in the different operation modes.
10.30-11.00 Coffee Break
11.00-12.00 Emulsion Polymerization Reactors (II) *(Prof. María Paulis, POLYMAT)*
Determination of safety parameters. Scale up. Residual monomer removal: devolatilization and postpolymerization.
12.00-13.00 On-line Monitoring *(Prof. José R. Leiza, POLYMAT)*
Sensor selection. Latex gas chromatography. Head-Space gas chromatography. Densimetry. Ultrasound. Spectroscopic techniques. Reaction calorimetry. Raman vs calorimetry. Experimental results.
13.00-14.30 Lunch
14.30-15.30 Control of Emulsion Polymerization Reactors *(Prof. José R. Leiza, POLYMAT)*
Open-loop and close-loop strategies. Close-loop for linear polymers: Optimal trajectories; Examples of safe optimal control of composition and MWD; Final property control. Unsolved issues in closed-loop control.
15.30-16.00 Coffee Break
16.00-18.00 Film Formation of Waterborne Coatings *(Prof. María Paulis, POLYMAT)*
Stages of film formation: drying, particle deformation and interdiffusion. Fundamental driving forces for particle coalescence. Introduction to key analytical techniques and review of experimental results.

Friday, September 11, 2026
8.30-10.00 "Biobased and Degradable Waterborne Polymers" (*Prof. Miren Aguirre, POLYMAT*)
Introduction. Biobased monomers and surfactants. Waterborne emulsion polymerization with biobased components. Degradable waterborne dispersions.
10.00-11.00 "Industrial Perspective" (*Dr. Javier Bohorquez,* Akzo Nobel)
An overview of the industrial perspective of polymers obtained by emulsion polymerization.
11.00-11.30 Coffee Break
11.30-13.30 Seminar on Latex Characterization (*Prof. José R. Leiza, POLYMAT)*
Copolymer composition. Molecular weight distribution. Gel content. Crosslinking density.

13.30 End of the workshop

PARTICIPANTS

The workshop is designed for scientists and engineers from industry and academia actively interested in emulsion polymerization. English will be the official language of the workshop.

LOCATION AND TRANSPORT FACILITIES

The workshop will take place in Joxe Mari Korta Center, in The University of the Basque Country Campus in Donostia / San Sebastián. It is easily accessible by plane via the (EAS) Donostia / San Sebastián Airport (30 minutes away by taxi), (BIO) Bilbao airport (60 minutes away by taxi) and (BIQ) Biarritz Airport (in France, 40 minutes away by taxi).

ACCOMODATION

A limited number of rooms have been blocked at special rates, in one hotel and one University Hall of Residence near the workshop location. Modern single rooms in the **Olarain University Hall of Residence** are available at a rate of **363.75 €** (5 nights, 72.75 €/night (breakfast and tax included. Bookings: *Mr. Beñat Pagoaga* bpagoaga@olarain.com Please provide the *Ref. EPP2026 Workshop.*

NH Aranzazu Collection Hotel offers rooms at a rate of **1,062.75 €** (5 nights, 212.55 €/night) breakfast and tax included. Bookings: nhcollectionaranzazu@nh-hotels.com Please provide the *Ref. EPP2026 Workshop.* (from September 6 to 11, 2026).

Each participant must arrange directly her/his reservation and will be charged by the Hotel/University Hall of Residence for room costs and extras. Please note that availability and price of these rooms are guaranteed until July 24, 2026.

Other accommodation can be found in: https://sansebastianturismoa.eus/en/

WORKSHOP FEES

The workshop fee is 1,600 € (free of transfer charges) and covers attendance, workshop notes, coffee breaks and conference dinner. Company members of the Industrial Liaison Program in Polymerization in Dispersed Media may register two people free of charge. Additional personnel from these companies may also register at half of the regular fee.

PAYMENT METHOD

The payment of the workshop fee can be made through the online registration or by Bank transfer to ES65 2095 0292 9010 6157 2763 (Bank: "KUTXABANK", C/Getaria 9-11, 20005 Donostia / San Sebastián, Spain) with the SWIFT code: BASKES2BXXX.