UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Escola d'Enginyeria de Barcelona Est

IMEM

Innovation in Materials and Molecular Engineering - Biomaterials for Regenerative Terapies (IMEM-BRT)

February, 2022

UNIVERSITAT POLITÈCNICA DE CATALUNYA
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Escola d'Enginyeria de Barcelona Est

Innovation in Materials and Molecular Engineering Group-Biomaterials for Regenerative Therapies (IMEM-BRT)

CRnE - Centre de Recerca en Ciència i Enginyeria Multiescala de Barcelona
IMEM CIEFMA-UPC - Innovació en Materials i Enginyeria Molecular Centre d'Integritat Estructural, Fiabilitat i Micromecànica dels Materials
Departament d'Enginyeria Química
Escola d'Enginyeria de Barcelona Est (EEBE)

tecnio catalonia
Fins a 31/12/2023
ACCIÓ Generalitat de Catalunya

For more details, please visit our website:
https://imem.upc.edu/en

karima.el.hauadi@upc.edu
(webpage manager)

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Who are we?

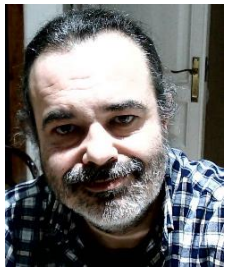
Prof. Carlos Alemán
(Group leader)

Elaine Armelin

Núria Borràs

Francesc Estrany

Oscar Bertrán



David Zanuy

Joan Torras

Jordi Casanovas (UdL)

José Ignacio Iribarren

Margarita Sánchez

Mar Pérez

Irene López
(qualified technician)

Research lines and services

- ✓ **Biosensors and electro-regulated drug delivery**
- ✓ **Flexible and compressible free-standing biorganic supercapacitors**
- ✓ **Coatings & adhesive formulations for applications in biomedical and corrosion fields**
- ✓ **Molecular Modeling of polymers, biopolymers and biosystems**
- ❑ **Quality control in metal protection, coatings formulations, insulating polymer characterizations, chemical engineering projects on demand.**

Ongoing and new projects

- **ADSR:** Autonomous Devices for Sensing and Release: Assembling biomedical systems for diagnosis and therapy - **RTI2018-098951-B-I00 (2018-July 2022)**
- **P1-Light:** Tecnologies de fabricació additiva amb làser d'alta potència - **SIFECAT 001-P-001646 (2020-April 2022)**
- **Bio Inspire Sensing:** Multidisciplinary Training of Young Researchers in Novel Implantable Bio-inspired sensors - **MSCA ITN No.955643 (2021-2024)**
- **INNOTEC:** Millora de la vida útil de les canonades dels sistemes de recollida pneumàtica de residus sòlids urbans a través de l'ús de nous materials **– ACCIÓ – Tecnio (2022-2023)**
- **CIMH:** Conductive and interative multifunctional hydrogel-based platforms for biomedical applications: Restoration of cardiac, skin and nerve tissues **– MICINN (Sept-2022)**
- **TherGel:** Thermosensitive hydrogels for emerging engineering applications **– MICINN (Sept-2022)**

GOBIERNO DE ESPAÑA MINISTERIO DE CIENCIA E INNOVACIÓN

BASE

European Commission

Xarxa R+D+I en Tecnologies de la Salut (XarTEC SALUT)

Post-doc researchers

Dr. Sofia Paulo

Dr. Sonia Lanzalaco

Dr. Brenda Molina

Dr. Lorena Macor

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Post-doc researchers

❑ **ADSR: RTI2018-098951-B-I00**

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN

Dr. Brenda Molina
brenda.molina@upc.edu
Multifunctional electrochemical cell based on a 3D-printed electroactive BioBOT

Dr. Sonia Lanzalaco
sonia.lanzalaco@upc.edu
Design of new sensors with thermosensitive hydrogels and AuNPs for biomedical applications

Dr. Sofia Paulo
sofia.paulo@upc.edu

Design of new bioinspired sensors and electrodes with thermosensitive hydrogels, quantum dots and AuNPs for biomedical applications

Dr. Lorena Macor
lorena.paola.macor@upc.edu

Conductive and interactive multifunctional hydrogel-based platforms for biomedical applications: Restoration of cardiac tissues

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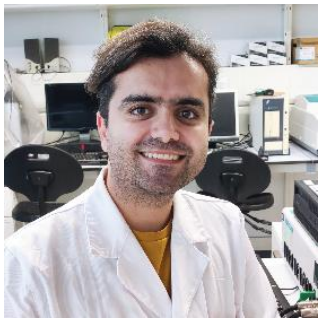
PhD researchers



❑ **Mr. Hamidreza Enshaei**
hamidreza.enshaei@upc.edu

- ✓ *Biotechnological applications of hybrid polymer-based materials*
- ✓ *Quality control of metallic structures and corrosion behavior*

❑ **Mr. Dídac Martí**
didac.marti@upc.edu

Advanced molecular modelling techniques for nano interfaces of immunosensors and polymers

❑ **Mr. Jordi Sans**
jordi.sans.mila@upc.edu

Design of Catalysts Based on Hydroxyapatite for Nitrogen and Carbon Fixation

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PhD researchers

❑ **Mrs. L'udmila Hodàsovà**
ludmila.hodasova1@upc.edu

3D-printed polymer/zirconia based composites for dental applications and development of polymer based biodegradable inks for stereolithography

❑ **Mrs. Helena Muñoz**
helena.muñoz.g@upc.edu

Sensor design and development for autonomous devices for disease diagnosis and therapy

❑ **Mr. Adrián Fontana**
adrian.fontana@upc.edu

Sistemas autónomos orientados al diagnóstico: Diseño de sensores capaces del reconocimiento y la liberación de biomoléculas

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New PhD researchers

❑ **Mrs. Júlia Mingot**
julia.mingot@upc.edu

Thermosensitive hydrogels for emerging chemical engineering applications

❑ **Mr. Samuele Colombi**
samuele.colombi.montagna@upc.edu

Development of sensing devices based on polymeric systems

❑ **Mrs. Leonor Resina**
maria.leonor.matos@upc.edu

New electro-responsive materials platforms for cancer treatment: Smart self-growing nanoparticles and transdermal devices

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❑ **Mrs. Jilian Gamboa**
jillian.gamboa@upc.edu

Development of new flexible and biodegradable conducting polymers in biosensors

❑ **Mr. Hussain Madhani**
ahammed.hussain.madhani@upc.edu

Synthesis and functionalization of biodegradable polymers supporting lipid membranes

❑ **Mr. Mahdi Hassankalhori** (*Industrial Doctorate programme*)
mahdi.hassankalhori@upc.edu
UPC – Zymvol Biomodeling SAS

Modeling engineered ion channels and their modulation: an agonist and/or antagonist study

ZYMVOL

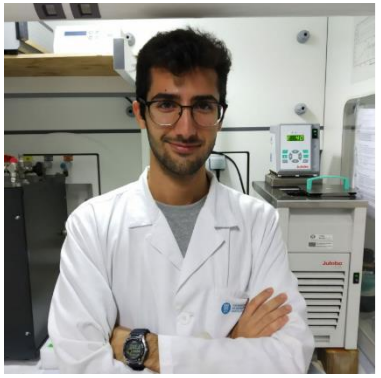
❑ **Mr. Víctor Castrejón**
victor@polymeradditives.es

Conductive and interactive multifunctional hydrogel-based platforms for biomedical applications

Research support staff

❑ **Mrs. Karima El Hauadi**
karima.el.hauadi@upc.edu

Sensores de bacterias integrados en dispositivos médicos (suturas y mallas quirúrgicas) y Estudio del péptido CREKA y su liberación controlada en hidrogel y NPs



❑ **Mr. Marc Arnau**
marc.arnau.roca@upc.edu

Enhanced electrical properties of polarized hydroxyapatite: explore its use as a green catalyst for the conversion of CO_2, CH_4 and N_2 into valuable products at mild conditions.

Laboratories & person responsible (from IMEM's Group):

Building I, 2nd floor:

▪ 3D-printing lab (**I2.6**):	Adrian Fontana
▪ Synthesis lab. (**I2.12-13**):	All IMEM's staff
▪ Thermal lab. (**I2.14**):	Carlos Alemán (Scala)
▪ Characterization lab. (**I2.15**):	Elaine Armelin (FTIR & WCA) Sonia Lanzalaco (plasma and DLS) Francesc Estrany, Margarita Sánchez, Núria Borràs (potenciostates) Mar Pérez-Madrigal (spin-coater) Jordi Sans (catalysis reactor)
▪ Characterization lab. (**I2.23**):	Elaine Armelin (Rheometer & Mechanical properties) Francesc Estrany (microbalance)
▪ Cell culture lab. (**I2.25**):	Mar Pérez-Madrigal
▪ Computer lab. (**CPD**):	Joan Torras (IMEM's cluster)
▪ Bio lab. (**I2.4**):	Núria Saperas (PSEP Group)

mecwins

Equipment uses:

- ✓ Never without previous training
- ✓ Google calendar reservations: talk with the responsibles
- ✓ Do not forget to sign up on the registration sheet available for each apparatus

Building C: CC02-03 (rooftop): Corrosion lab.

- Corrosion lab. (**CC02-CC03**): Elaine Armelin, Iñaki Iribarren, Hamidreza Enshaei

General lab. management: Mrs. Irene López

- Use & safe practices at lab. (initial training course)
- We don't have drying papers in the lab…
- I don't find a reagent… → (under invitation from Irene) https://app.quartzy.com/login
- The hood are not working properly…
- IMPORTANT: Every two months (or under demand) there will be a general laboratories cleaning & ordering (only PhD and TFG/TFM students)

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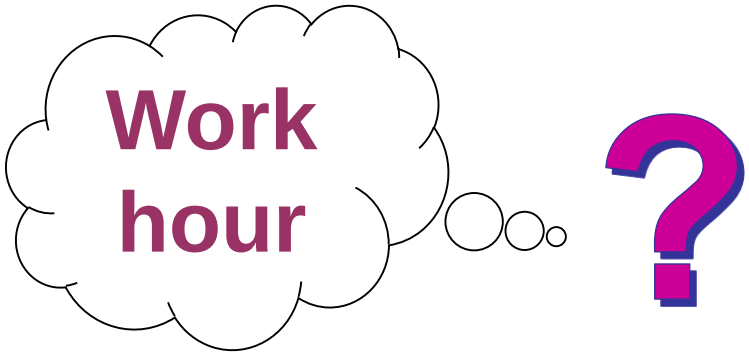
Rules to work at our Group:



Staff: flexible

PhD and post-docs:

Fixed: 10 am to 4:30 pm

Flexible: starting & ending work (until completing the whole work day)

It is forbidden to work alone at lab (UPC rules)

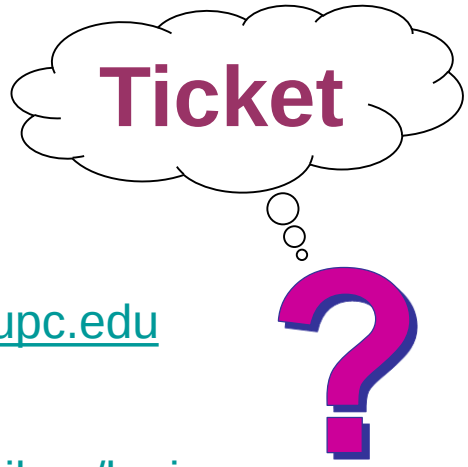
NOVELTIES

- Implementation of **monthly report** of your results (plots, tables, figures) - PhD and Post-doc researchers
- Group seminars (**compulsory** for PhD students in Polymers & Biopolymers program)
- Maintain your research and transversal activities updated in **DRAC** and **PhD Atenea** platforms

ATENEA PhD

DRAC PhD

Campus & UPC services:



- My computer is not working…https://serveistic.cdb.upc.edu/
- I need a classroom to to rehearse my oral presentation or I cannot enter in my office… espais.eebe@upc.edu
- The air conditioning system is not working…

https://eebe.upc.edu/ca/serveis ➡ https://facil.upc.edu/archibus/login.axvw

Important webs:

- Oficina de doctorado: https://doctorat.upc.edu/ca
- To find UPC members: https://directori.upc.edu/directori/
- To find courses: https://bibliotecnica.upc.edu/formacio/cursos-formacio

  https://www.upc.edu/slt/ca/comunicacio-eficac

  https://www.upc.edu/ice/ca/

Some relevant phone numbers at EEBE campus:

- 93 413 7400 (Building A)
- 93 413 7952 (Building I)
- 93 413 74 56 (Centre ViPS-Campus EEBE,1 week per month)

Centre ViPS Diagonal-Besòs
Av. Eduard Maristany, 16
Edifici I, planta S1, porta 19
08019 Barcelona (Barcelona)
PLÀNOL

Metgessa: Maria José Benedicto
DUI: Noemí Rodergas

Telèfon: **93 413 74 56**
cvipsdiagonalbesos@aspyprevencion.com

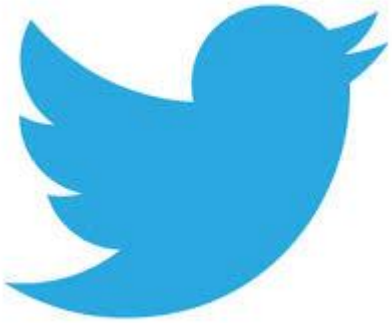
Emergency:

- Pay attention to the instructions posted on doors and hallways
- Communicate it to the staff or 659 725 544
- 689 234 507 (security personnel)

Covid positive:

direcció.eebe@upc.edu
+ your supervisors

Follow us in:



@imem_group

PARTICIPATE sending your research news to: m.mar.perez@upc.edu