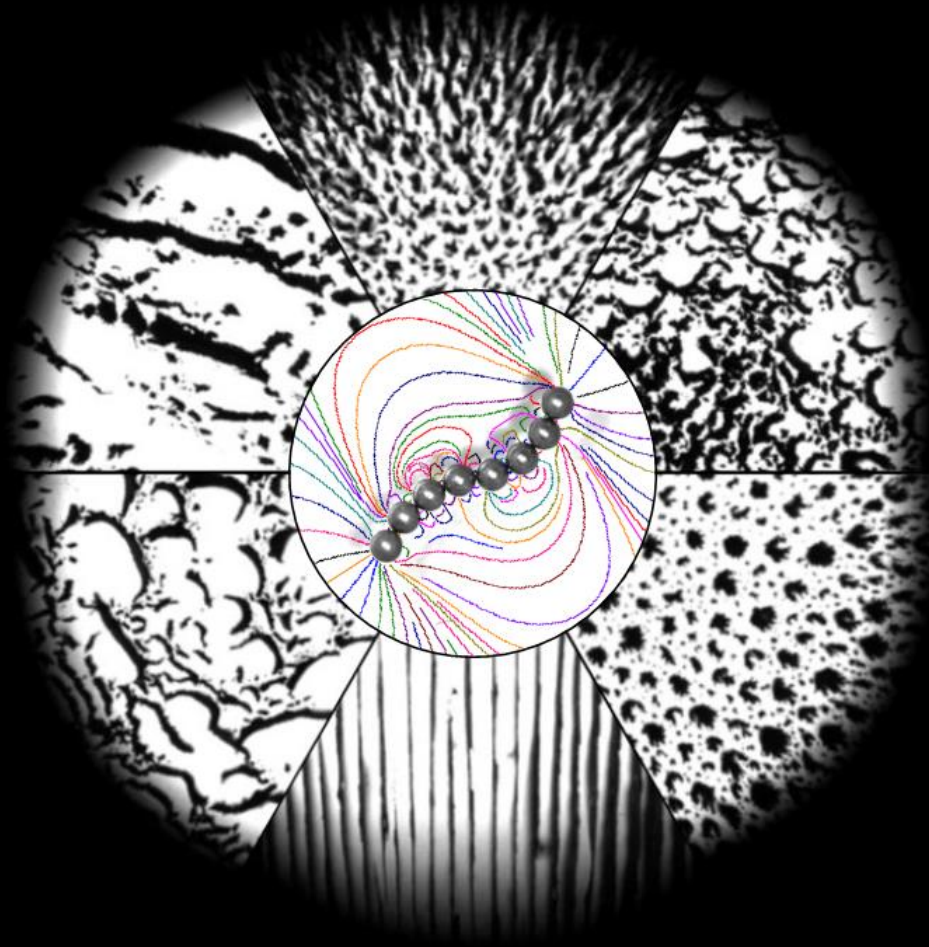


Magnetic Soft Matter Group

Department of Applied Physics



UNIVERSIDAD
DE GRANADA



Laboratorio
Singular
UGR

MULTIDISCIPLINARITY

Physicists



José Morillas



Fernando Vereda



Guillermo Camacho



José Antonio Ruiz

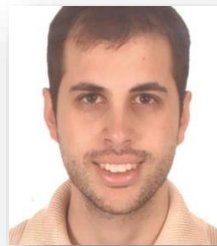


Juan de Vicente
(Principal Investigator)

Engineers



Oscar Martínez-Cano



Alejandro Rodríguez

Chemists

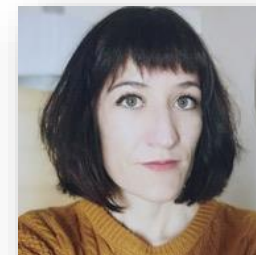


Stefania Nardecchia



Matthew Terkel

Biotechnologists



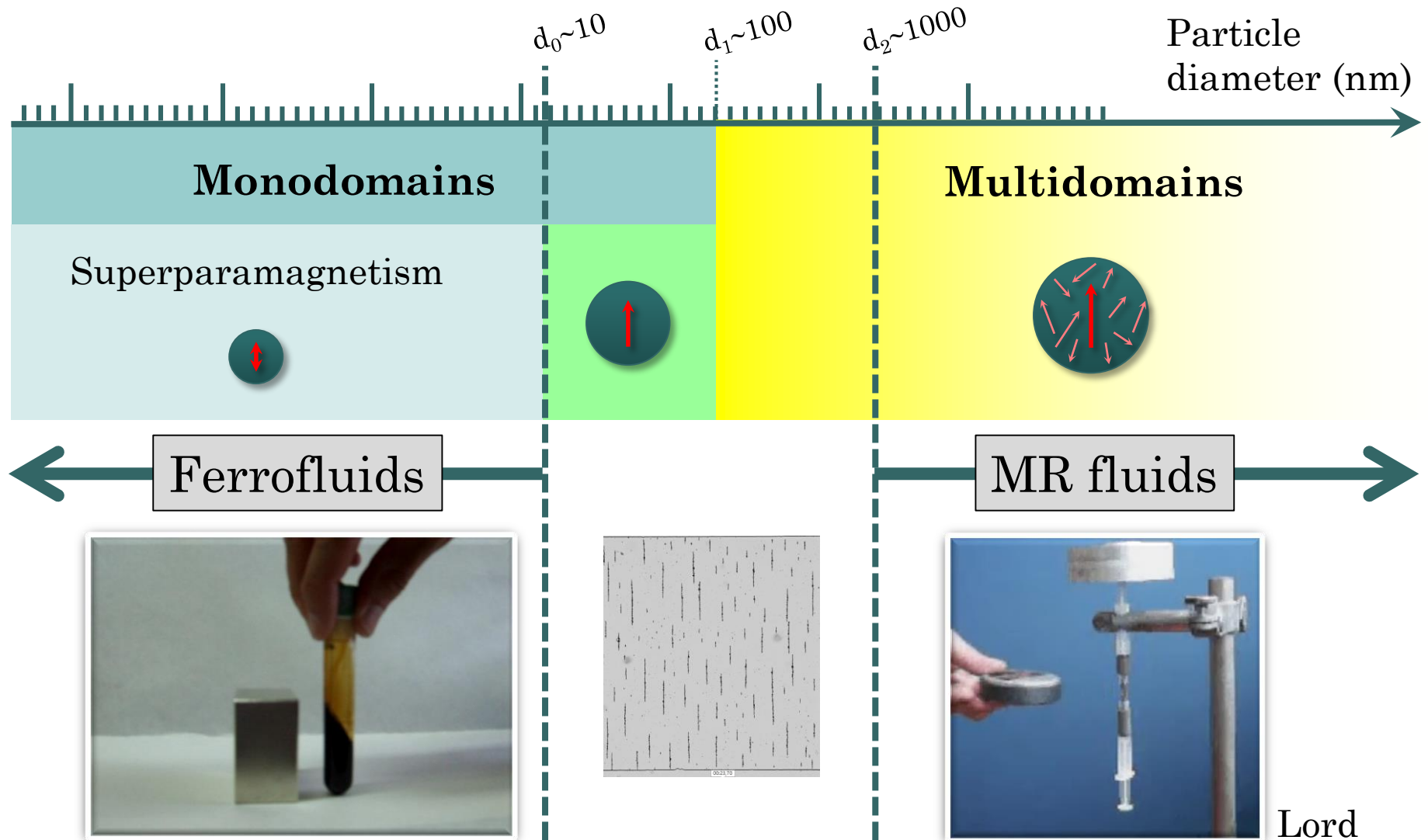
Paola Sánchez



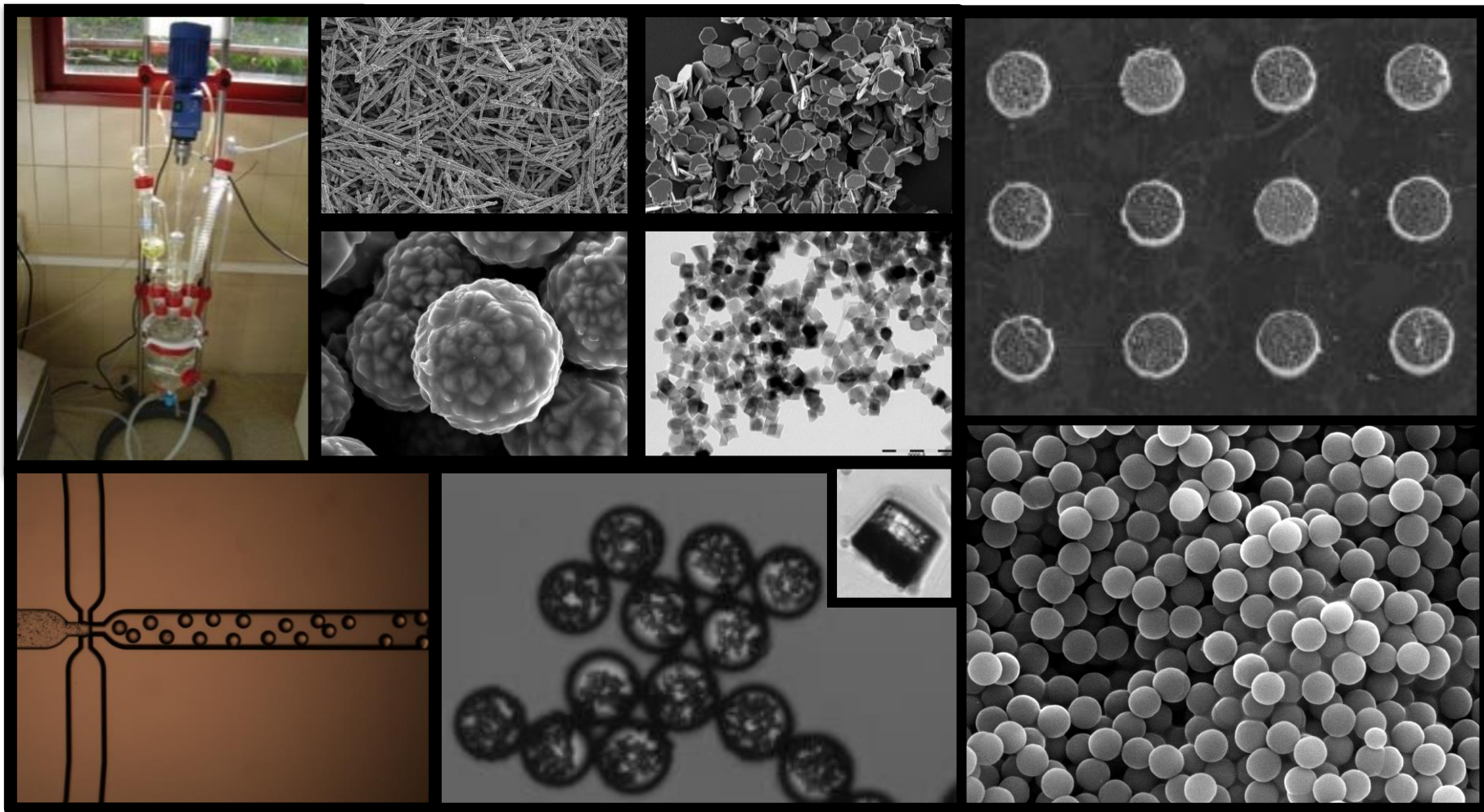
Mattia Bramini



Magnetic Soft Matter

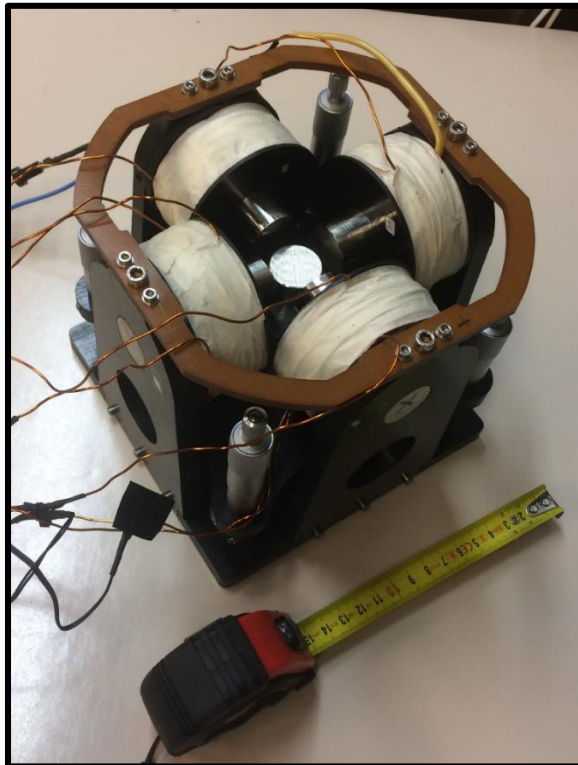


Magnetic Nanoparticles

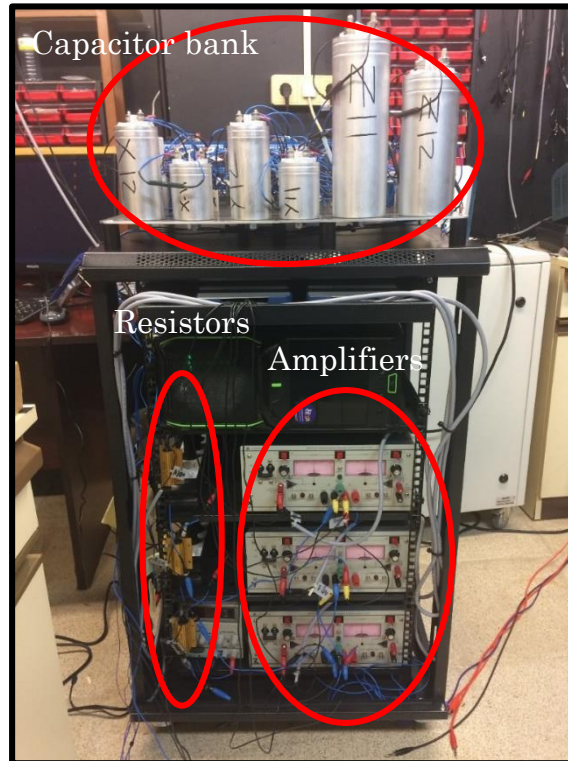


Multiaxial Magnetic Field Generator

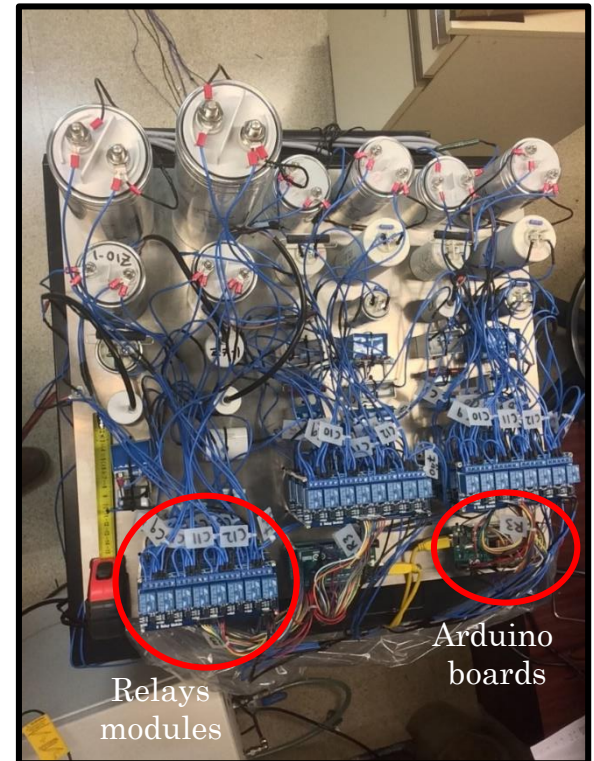
Electromagnet



Generator

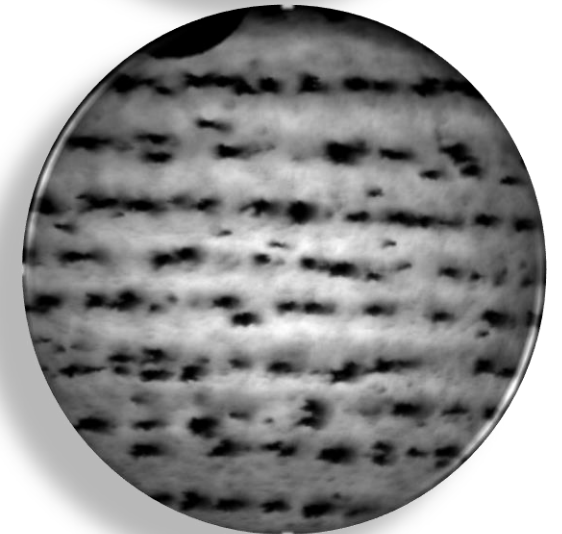
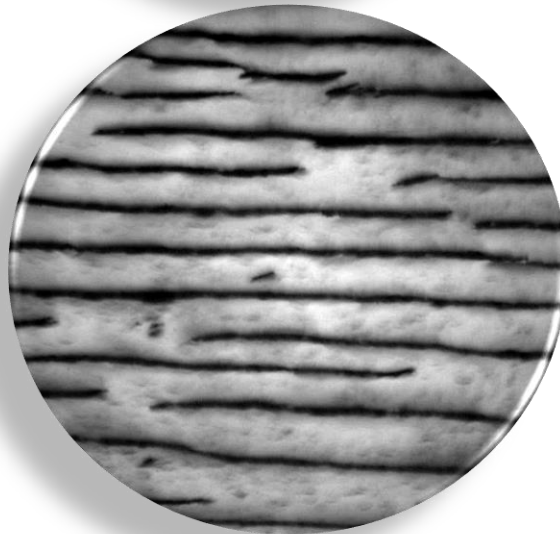
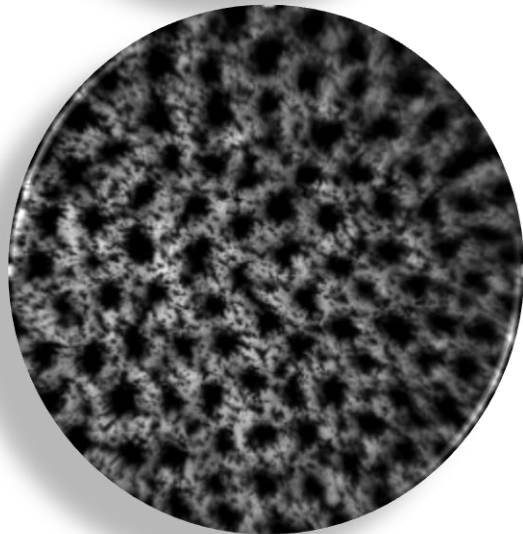
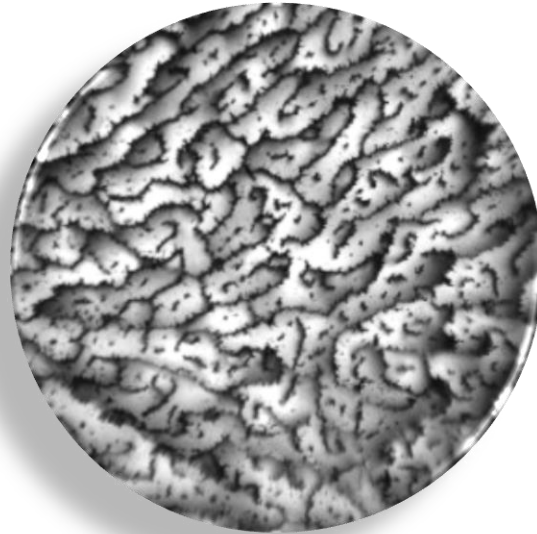


Front view

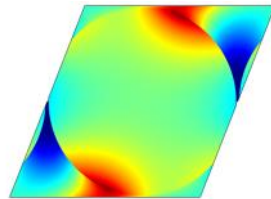
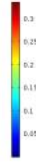
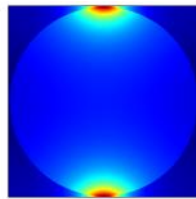
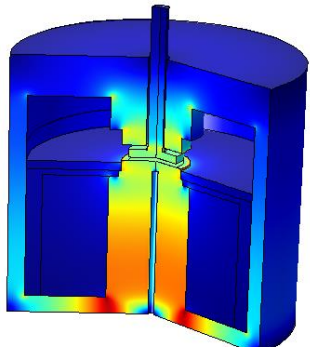


Top view

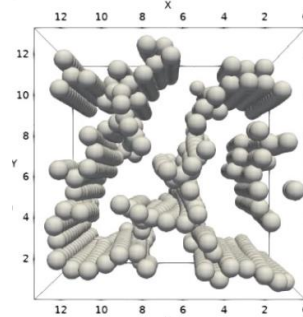
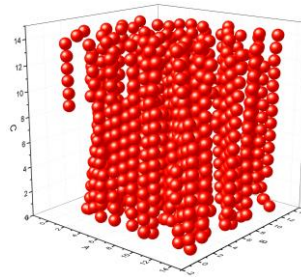
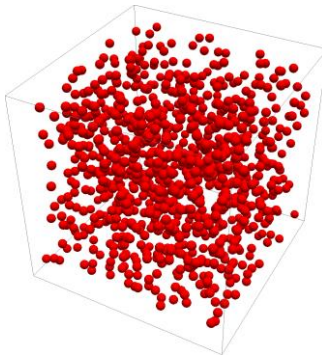
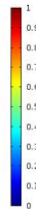
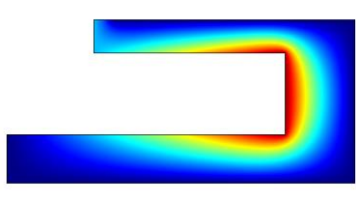
Directed Self-assembly



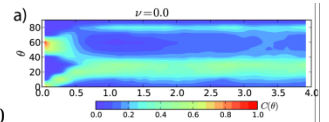
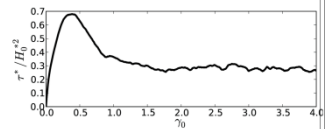
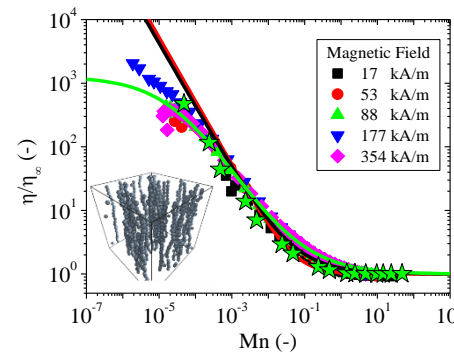
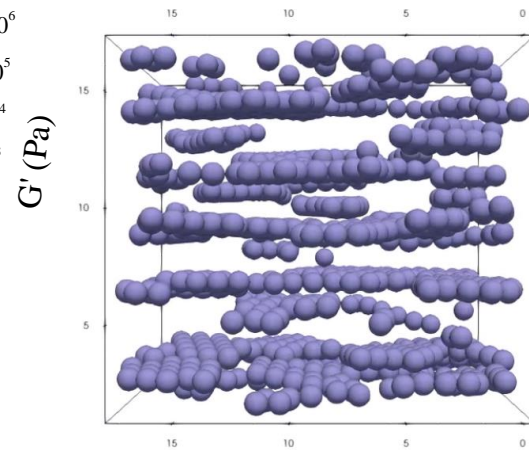
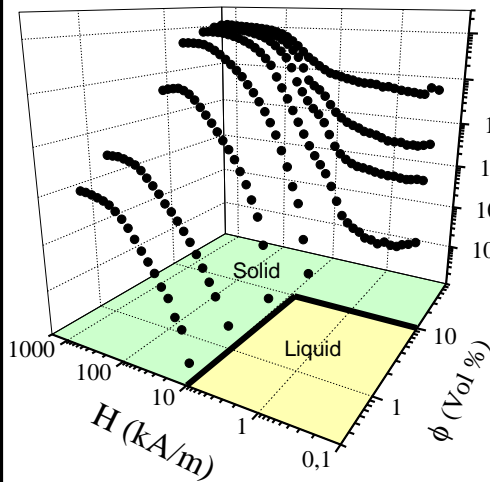
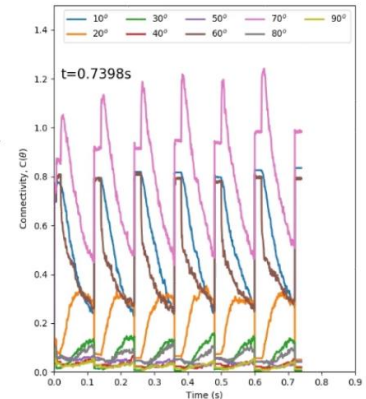
Theory and Simulations



Brownian Dynamic Simulations.
 Soft-elastohydrodynamics.
 Computational Fluid Dynamics.
 Finite Element Method Simulations.
 Structural viscosity models.
 Unsteady triaxial fields.



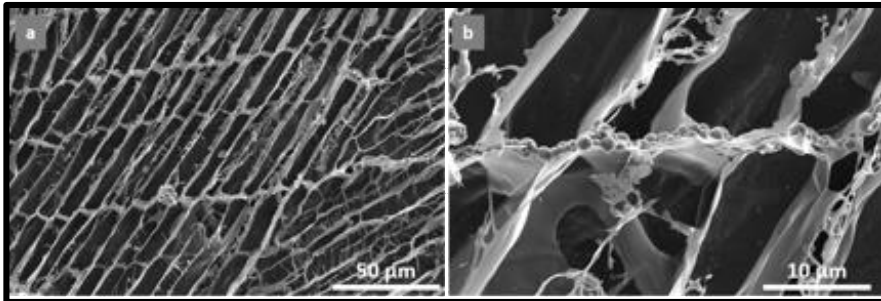
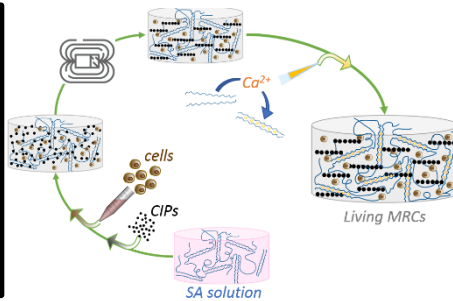
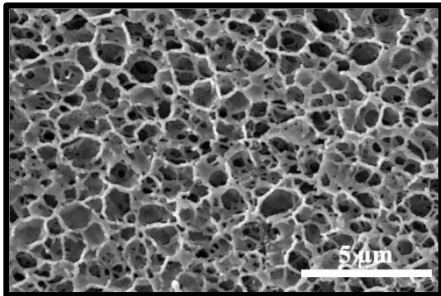
$H=100\text{ kA/m}$
 $\sigma=1\mu\text{m}$
 $\eta=4.5\text{ mPa}\cdot\text{s}$



Nanobiomagnetism

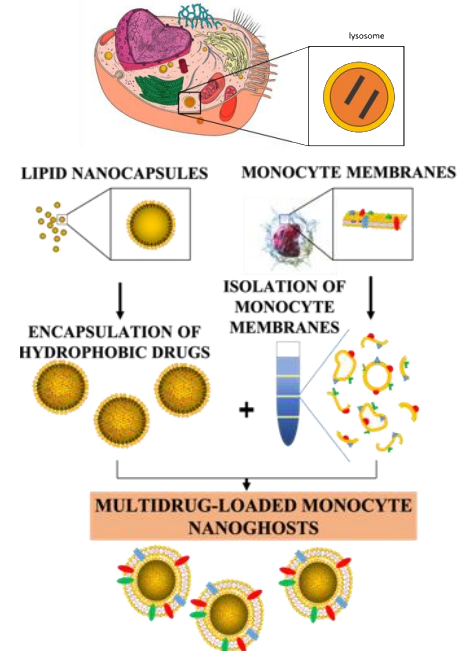
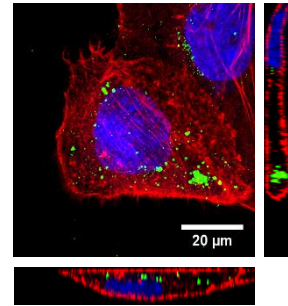
Regenerative medicine and cancer treatment

Smart scaffolds



Artificial cells

- Neuro-interfaces to foster regeneration and restore network connectivity in neurodegenerative disorders.
- Cell guidance to target tumour regions.
- AC fields to suppress tumorigenic cells.
- Cell membrane camouflage to increase lifetime in blood.



Experiencia en Dirección de Trabajos Fin de Grado

José Rafael Morillas Medina

Julio de 2014

Alize Goiria

Septiembre de 2015

Abraham Moreno Moreno

Septiembre de 2016

Álvaro González Rodríguez

Julio de 2018

Iván Navarro Arrebola

Septiembre de 2018

Antonio José Villegas López

Julio de 2019

Guillermo Camacho Villar

Julio de 2020

En proceso:

Fidel Muriel Martín

Belén Morales Vega



Funding



Junta de Andalucía

Consejería de Transformación Económica,
Industria, Conocimiento y Universidades

SECRETARÍA GENERAL DE UNIVERSIDADES, INVESTIGACIÓN Y TECNOLOGÍA



UNIVERSIDAD DE GRANADA

Programa Estatal de Generación de Conocimiento y Fortalecimiento Científico y Tecnológico del Sistema de I+D+i.
Subprograma Estatal de Infraestructuras de Investigación y Equipamiento Científico-Técnico. (Plan estatal I+D+i 2017-2020)

Laboratorio Singular en Tecnologías Avanzadas:

**Laboratorio de Física de Fluidos no Newtonianos (F2N2Lab):
Tribo-Reología, Líquidos Magnéticos y Biomateriales Nanoestructurados**

Proyecto cofinanciado por el Fondo Europeo de Desarrollo Regional



UNIVERSIDAD DE GRANADA

Magnetic Soft Matter Group
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Singular Laboratory on Advanced Technologies



UNIVERSIDAD
DE GRANADA

Laboratorio de Física de Fluidos no
Newtonianos (F2N2Lab):
Tribo-Reología, Líquidos Magnéticos
y Biomateriales Nanoestructurados

Laboratorio Singular en
Tecnologías Avanzadas

Responsable: Juan de Vicente Álvarez-Manzaneda



Laboratorios
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