

Marie Skłodowska Curie Individual Fellowship 2020

Expression of Interest for hosting Marie Curie Fellows

1. Supervisor (name and e-mail address)

Paolo Bergese (professor of Chemistry)
paolo.bergese@unibs.it

2. Department (name and address)

Dept. of Molecular and Translational Medicine (DMTM), University of Brescia
Viale Europa 11
25123 Brescia, Italy

3. Panel (choose one)

- X Chemistry (CHEM)
- Social Sciences and Humanities (SOC)
 - Economic Sciences (ECO)
 - Information Science and Engineering (ENG)
 - Environment and Geosciences (ENV)
- X Life Sciences (LIF)
- Mathematics (MAT)
 - Physics (PHY)

4. Description of your research activities (max 10 lines)*

I grew up as a scientist at the bio-nano frontier, where I realized colloid and surface science can raise and answer original biological questions. Today, totally fascinated by biogenic nanoparticles, I head a multidisciplinary team featuring one of the first stories of integration of chemistry, nanotechnology and molecular biology in extracellular vesicle research.

The current main research lines in our lab (of course open to contaminations!) are:

- Extracellular vesicles (on which we coordinate an Horizon 2020 FET open <http://www.evfoundry.eu>).
- Nanomechanical biosensors.
- Biological-nanomaterial interfaces.

5. Key-words

Surface Science and Nanostructures, Colloid Chemistry, Soft Matter, Biological Nanoparticles, Extracellular Vesicles, Cell Communication, Nanomedicine, Sensors, Diagnostics.

6. Short CV of the supervisor (max 5 lines)

Paolo Bergese (born April 4 1975) is Full Professor of Chemistry at the Department of Molecular and Translational Medicine of the University of Brescia. In 2010 and 2012 he has been Visiting Professor at the Massachusetts Institute of Technology (MIT), since 2013 Key Researcher of the Research Centre for Pharmaceutical Engineering (RCPE, Graz).

For updated CV, publications and grant list please visit <http://orcid.org/0000-0002-4652-2168>

7. List of 5 main publications of the supervisor

1. Busatto, S., Zandrini, A., Radeghieri, A., Paolini, L., Romano, M., Presta, M., **Bergese, P.** (2020). The nanostructured secretome. *Biomater. Sci.* 8, 39–63. doi:10.1039/c9bm01007f. Journal cover <https://pubs.rsc.org/en/content/articlelanding/2020/bm/d0bm90005b#!divAbstract>
2. Montis, C., Busatto, S., Valle, F., Zandrini, A., Salvatore, A., Gerelli, Y., Berti, D., **Bergese, P.** (2018). Biogenic Supported Lipid Bilayers from Nanosized Extracellular Vesicles. *Adv. Biosys.* 2, 1700200–7. doi:10.1002/adbi.201700200.
3. Maiolo D., Paolini L., Di Noto G., Zandrini A., Berti D., **Bergese P.** *, Ricotta D.* Colorimetric *Nanoplasmonic Assay to Determine Purity and Titrates Extracellular Vesicles. Analytical Chemistry* (2015) 87, 4168-4176. *Senior Authors. doi: 10.1021/ac504861d; Journal Cover: <http://pubs.acs.org/toc/anchem/87/8>
4. Montis C., Maiolo D., **Bergese P.***, Berti D.* *Interaction of Nanoparticles with Lipid Membranes: a Multiscale Perspective.* *Nanoscale* (2014) 6, 6452-6457. *Corr. Authors. doi: 10.1039/c4nr00838c
5. Biavardi E., Federici S., Tudisco C., Menozzi D., Massera, C., Sottini A., Condorelli G.G., **Bergese P.***, Dalcanale*, E. *Cavitand-grafted silicon microcantilevers as a universal probe for illicit and designer drugs in water.* *Angewandte Chemie - International Edition* (2014) 53, 1 – 7. *Corr. Authors. doi: 10.1002/anie.201404774. Journal Cover: <http://dx.doi.org/10.1002/anie.201406159>

*Please consider that the preparation of a Marie Curie proposal requires some time. Fellow and supervisor have to agree on a project and training opportunities for the fellow.