

## PhD Candidate Profile

**Name:**

Maria José Bastos Pires de Lima

**Research Group:**

Photocatalysis research group

**Research Centre:**

Laboratory of catalysis and materials (LCM) - Associate Laboratory LSRE-LCM

**Department/School(s):**

Chemistry Engineering department, Faculty of Engineering

**College:**

University of Porto, Portugal

**Supervisor(s):**

Adrián Silva

Cláudia Silva

Joaquim Faria

**Funding body:**

Fundação para a Ciência e Tecnologia (FCT)

**Area (field) of study:**

Selective photocatalysis

**Thesis Title:**

Selective photocatalytic conversions integrated on a continuous-flow microfluidic process

**Abstract:**

The main objectives of this PhD proposal will be: (i) to develop a highly active heterogeneous semiconductor photocatalyst that allows selective conversion of selected molecules with added value to the pharmaceutical and chemical industry; (ii) to develop a scalable low-cost continuous flow microfluidic photo-reactor implementing the most effective and stable catalysts for the targeted reactions.

**Collaborations:**

N/A

**Publications:**

**1. Lima, M. J.**, Leblebici, M. E., Dias, M. M., Lopes, J. C. B., Silva, C. G., Silva, A. M. T., Faria, J. L. "Continuous flow photo-Fenton treatment of ciprofloxacin in aqueous solutions using homogeneous and magnetically recoverable catalysts", *Environmental Science and Pollution Research* 21, 18: 11116 - 11125, 2014.

doi: 10.1007/s11356-014-2515-6



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**2. Lima, M. J.**, Correlo, V.M., Reis, R.L. "Micro/nano replication and 3D assembling techniques for scaffold fabrication", *Materials Science and Engineering: C* 42, 0: 615 - 621, 2014.

doi: 10.1016/j.msec.2014.05.064

**3. Lima, M. J.**, Pirraco, R.P., Sousa, R.A., Neves, N.M., Marques, A.P., Bhattacharya, M., Correlo, V.M., Reis, Rui L. Bottom-up approach to construct microfabricated multi-layer scaffolds for bone tissue engineering", *Biomedical Microdevices* 16, 1: 69 - 78, 2013.

doi: 10.1007/s10544-013-9806-4

### Presentations:

**1. Lima, M.J.**, Silva, C.G, Silva, A.M.T., Faria, J.L "Selective photocatalytic oxidation of benzyl alcohol to benzaldehyde under LED irradiation", XXIV Encontro Nacional da Sociedade Portuguesa de Química, Coimbra, July 1-3 (2015).

**2. Faria, J.L.**, Silva, A.M.T., Silva, C.G., Pastrana-Martinez, L.M., Silva, E.S., Sampaio, **M.J.**, Lima, M.J., Segundo, R., "Composing materials: a photocatalyst symphony", XXIV Encontro Nacional da Sociedade Portuguesa de Química, Coimbra, July 1-3 (2015).

**3. Lima, M. J.**, Leblebici, M. E, Dias, M. M, Lopes, J.C.B., Silva, C.G., Silva, A. M. T., Faria, J.L.. "Antibiotic removal by continuous photo-Fenton using a magnetically recoverable catalyst", XX Encontro Luso-Galego de QuímicaPorto, Portugal, (2014)

**4. Lima, M. J.**, Leblebici, M.E., Dias, M. M., Lopes, J.C.B., Silva, C.G., Faria, J.L., Silva, A.M.T. "Continuous photo-Fenton treatment of ciprofloxacin in aqueous solutions using a magnetically recoverable catalyst", XIX Encontro Luso-Galego de Química, Vigo, 12-14 de November (2013).

**5. Silva, C.G.**, **Lima, M. J.**, Silva, A.M.T., Faria, J.L. "Continuous photocatalytic treatment of ciprofloxacin effluents", 3rd European Symposium on Photocatalysis, PORTOROŽ, Slovenia, (2013).

**6. Lima, M. J.**, Silva, C.G., Silva, A.M.T., Faria, J.L. "Ciprofloxacin Degradation in a continuous photo-Fenton reactor", IX Encontro Nacional de Catálise e Materiais Porosos (IX ENCMP), Porto, Portugal, (2013).