INTERfaces - Heterogeneous biocatalysis reaction cascades
European Industrial Doctorates (EID)

Call for applications: February 01st – March 1st 2020

The Marie-Skłodowska-Curie Actions EID Programme **INTERfaces** combines material science and protein engineering to design tailored enzymes and (bio-based) materials that will complement each other to obtain optimized heterogeneous biocatalysts. Process optimization and up-scale in industry will reveal key factors for synthetic utilization of the biocatalysts. 13 Non-academic partners ranging from high-tech SMEs to large producing companies and 10 academic institutions offer an intersectoral and interdisciplinary environment to provide 14 Ph.D. candidates with outstanding employability profiles for the European Biotech Sector.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 860414.

ESR Projects

ESR 01 – Functional materials for enzyme immobilization
Academic Supervisor: Prof. Dr. Bernd Nidetzky/ Dr. Juan M. Bolívar (Graz University of Technology, AT/ UCM, ES)
Industrial Supervisor: PhD Antonio Luis Medina Castillo (NanoMyp, ES)

ESR 02 – Ceramic-based structured materials for enzyme immobilization
Academic Supervisor: Prof. Dr. Bernd Nidetzky/ Dr. Juan M. Bolívar (Graz University of Technology, AT/ UCM, ES)
Industrial Supervisor: Dr. Jonas Gurauskis (AENEAM, Advanced Membrane Technologies S.L., ES)

ESR 03 – Surface engineering of transaminases to tailor protein immobilization on microreactors
Academic Supervisor: Prof. Dr. Fernando López-Gallego (CIC biomaGUNE, ES)
Industrial Supervisor: PhD Maciej Skolimowski (MICRONIT, NL)

ESR 04 –Advanced morphologic and spectroscopic characterization of immobilized enzymes and surface analysis
Academic Supervisor: Prof. Lucia Gardossi (Università degli Studi di Trieste (UNITS), IT)
Industrial Supervisor: PhD Alexey Volkov (EnginZyme A.B., SE)

ESR 05 –Transaminase-catalyzed synthesis routes from HMF to renewable monomers
Academic Supervisor: Prof. Dr. Per Berglund (KTH, SE)
Industrial Supervisor: Dr. Luuk van Langen (ViaZym B.V., NL)

ESR 06 – Compartmentalization of transaminases and lipases to synthesize amides derived from HMF
Academic Supervisor: Assoc. Prof. Dr. Vicente Gotor-Fernández/ Assoc. Prof. Dr. Iván Lavandera (University of Oviedo, ES)
Industrial Supervisor: PhD Alexey Volkov (EnginZyme A.B., SE)

ESR 07 – Development of new engineered laccases for the synthesis of ferulic acid and HMF derivatives
Academic Supervisor: Assoc. Prof. Dr. Iván Lavandera/ Assoc. Prof. Dr. Vicente Gotor-Fernández (University of Oviedo, ES)
Industrial Supervisor: Prof. Dr. Giovanni Sannia/ Dr. Vincenzo Lettera (BioPox s.r.l., IT)

ESR 08 – Selective synthesis of 2,5-dihydroxymethyl furane (BHMF) catalyzed by self-sufficient immobilized multi-enzyme systems
Academic Supervisor: Prof. Dr. Fernando López-Gallego (CIC biomaGUNE, ES)
Industrial Supervisor: Dr. André Pick (CASCAT, DE)

ESR 09 – Development of a cascade combining in vitro and in vivo catalysis for dearomatized vinyl compounds
Academic Supervisor: Prof. Dr. Robert Kourist (Graz University of Technology, AT)
Industrial Supervisor: Dr. Andreas Taden (Henkel, DE)

ESR 10 – Compartmentalized chemo-and biocatalysts for chiral amine synthesis
Academic Supervisor: Prof. Dr. Harald Gröger (University of Bielefeld, DE)
Industrial Supervisor: Dr. Jonas Gurauskis (AENEAM, Advanced Membrane Technologies S.L., ES)

ESR 11 – Optimization of immobilization procedures for biocatalyst production
Academic Supervisor: Prof. Lucia Gardossi (Università degli Studi di Trieste (UNITS), IT)
Industrial Supervisor: Dr. Luuk van Langen (ViaZym B.V., NL)

ESR 12 – Chemoenzymatic selective oxidation for the synthesis of rare sugars
Academic Supervisor: Prof. Dr. Robert Kourist (acib GmbH, AT)
Industrial Supervisor: Dr. André Pick (CASCAT, DE)

ESR 13 – Medium and reaction engineering of chemoenzymatic synthesis of biopolymer precursors
Academic Supervisor: Assoc. Prof. Dr. Selin Kara (Aarhus University, DK)
Industrial Supervisor: Dr. Emil Byström (SpinChem, SE)

ESR 14 – Medium and reaction engineering of enzymatic cascade for furan-dicarboxylic acid synthesis
Academic Supervisor: Assoc. Prof. Dr. Selin Kara (Aarhus University, DK)
Industrial Supervisor: Dr. Emil Byström (SpinChem, SE)

Further information can be found on http://www.h2020interfaces.eu