



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

Call for applications: February 01<sup>st</sup> – March 1<sup>st</sup> 2020

The Marie-Sklódowska-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.



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## 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 Gorauski](#) ([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](#) ([EnqinZyme 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](#) ([EnqinZyme 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 Gorauski](#) ([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)