Ioannis Pavlidis

Assistant Professor of Biological Chemistry

GENERAL INFORMATION

Work Address	Dept. of Chemistry, University of Crete, Voutes University Campus, 70013 Heraklion, Greece
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Telephone	+30 2810 545130 || +30 6934316317
Date & Place of Birth	08 March 1983 - Thessaloniki, Greece
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ORCID ID	0000-0001-5811-368X

EDUCATION

2011 PhD - Biotechnology, Enzyme Technology | *University of Ioannina, GR*

2005 Diploma of Biology | *Dept. of Biological Applications and Technology, University of Ioannina, GR*

2013 BSc Education | *Dept. of Primary Education, University of Ioannina, GR*

PROFESSIONAL & RESEARCH EXPERIENCE

Since **2018** Assistant Professor, Dept. of Chemistry. *University of Crete, GR*
13/5/2021: Tenured Assistant Professor.

2015-2017 Junior Group leader, group of Biotechnology, Dept. of Biochemistry, Institute of Biology. *University of Kassel, DE*

2011-2015 Research Associate (Post-Doc), Dept. of Biotechnology & Enzyme Catalysis, Institute of Biochemistry. *University of Greifswald, DE*

2012 Two-month secondment in the frame of ITN Marie-Curie Fellowship. *BRAIN AG, DE*

PUBLICATIONS

My published scientific work consists of:

45	Publications in peer-review international journals
8	Chapters in international books, **1** editing of book
1	Patent application
87	Conference proceedings (**16** oral presentations, **5** of them invited)

Bibliometric Data †:

Citations	1423
h-index	20
Total I.F. (2020)	277,7
Average I.F. per article	6,5

† Source: Scopus // 13.09.2022

RESEARCH INTERESTS

My research focuses on the fields of **Enzyme Technology & Applied Biocatalysis**. My group is mostly active on:

Development of industrially relevant bioprocesses: Development of green bioprocesses using enzymes or microorganisms for the production of high-added value products, interesting for the food and pharma industry.

Development of enzymatic cascades: *In vitro* reconstitution of enzymatic pathways of two and more enzymes for the production of high-added value products.

Identification of novel enzymes and metabolic pathways: Identification of interesting biocatalysts for the aforementioned processes via database analysis, sequence homology and selection screening.

Biocatalysts optimization via protein engineering: Evolution of enzymes by means of rational design and directed evolution. Development of new methods of protein engineering.

Bioinformatic analysis of biocatalytic behavior: Study of the mechanistic aspects of biocatalysis, by molecular docking simulation, homology models and other *in silico* methods.

Valorization of wastes: Development of bioprocesses for the valorization of industrial and agricultural wastes.

RESEARCH PROJECTS

Participation in >10 national and international projects. Here the one participating as principal investigator:

2020-2023 *New catalytic enzymes and enzymatic processes from the marine microbiome for refining marine seaweed biomass*
University of Crete (PI: I.V. Pavlidis)
Funding: BlueBio [ID: 127] – UoC Budget: 97.925,06 €

2020-2023 *Sustainable biocatalytic production of advanced biodiesel using novel biocatalysts produced from conventional biodiesel industrial byproducts*
University of Crete (PI: I.V. Pavlidis)
Funding: G.S.R.T. [Project code: T2EΔK-00573] – Budget: 161.140 €

2020-2023 *Development of sustainable chemoenzymatic processes for optically pure amines from alcohols or alkynes*
University of Crete (PI: I.V. Pavlidis)
Funding: H.F.R.I. [Application number: 664] – Budget: 200.000 €

2020-2021 Novel sweetener proteins as food additives
University of Crete (PI: I.V. Pavlidis)
Funding: University of Crete - ΕΛΚΕ [ID:10712] – Budget: 9.991 €

2019-2020 *Production and evolution of cytochrome P450 for the synthesis of bioactive compounds*
University of Crete (PI: I.V. Pavlidis)
Funding: University of Crete - ΕΛΚΕ [ID:10325] – Budget: 1.500 €

2018-2019 *Biocatalytic amination of furane derivatives using transaminases, for the production of biopolymer building blocks (Fur2Biopol).*
University of Crete (PI: I.V. Pavlidis)
Funding: University of Crete - ΕΛΚΕ [ID:10123] – Budget: 1.500 €

2016-2017 *Localized immobilization of enzymatic cascades onto ultrananocrystalline diamond films for innovative biocatalytic applications.*
University of Kassel (PI: I.V. Pavlidis)
Funding: University of Kassel - ZFF-PROJEKT [Application number: 1963] – Budget: 5.000 €

2015-2018 *Application of methyltransferases for the production of high value-added products*
University of Kassel (PI: I.V. Pavlidis)
Funding: Fonds der Chemischen Industrie – Sachkostenzuschüsse [Konto: SK197/08] – Budget: 10.000 €

2015-2017 *Nanoscale enzymatic production lines*
University of Kassel (PI: I.V. Pavlidis)
Funding: Hochschulpakt 2020, BMBF via University of Kassel [Auftragsnummer: 95385301] – Budget: 60.000 € + my salaries as group leader (TV-14)

FELLOWSHIPS AND AWARDS

2022 John van Geuns Fond fellowship for the invited lecture at the University of Amsterdam, NL

2014 DAAD fellowship for the participation in GRC Biocatalysis conference at Smithfield, USA

2011-2012 ITN Marie-Curie Fellowship through the program Actions for my research associate position.

2007-2011 Bodossaki Foundation Fellowship for the PhD thesis.

INDEPENDENT TEACHING EXPERIENCE

2018-today University of Crete: In BSc Chemistry: "Enzyme Biotechnology" (elective); In MSc Chemistry: "Protein Engineering" (elective). In MSc Protein Biotechnology: "Drug Development Technologies" and "Bioinformatics". Supervision of 15 BSc (11 completed), 7 MSc (4 completed) and 4 PhD students.

2015-today University of Kassel: "Biotechnology", "Biocatalysis" (2015-2019) and "Applied Biotechnology" (2020-today) classes to BSc and MSc Curriculum of both Nanostructure Science and Biology. Supervision in my "Biotechnology" group of 15 research internships, 1 BSc, 1 MSc (all completed) & 2 PhD students (co-supervised with Prof. F.W. Herberg, due to my appointment in UoC).

INVITED LECTURES IN UNIVERSITIES, RESEARCH INSTITUTES AND COMPANIES

21 Apr 2022 Van't Hoff Institute for Molecular Sciences, University of Amsterdam, NL

8 Jun 2021 Institute of Molecular Biotechnology (CATALOX graduate training school), TU Graz, AT

26 Oct 2020 Department of Material Science and Technologies, University of Crete, GR.

7 Sep 2019 Institute of Biochemistry, University of Greifswald, DE.

11 Apr 2019 School of Chemical Engineering, National Technical University of Athens, GR.

17 May 2017 University of Warmia and Mazury, Olsztyn, PL.

09 Jun 2015 1st Science and Innovation Forum, F. Hoffmann-La Roche, Basel, CH.

05 May 2015 Beijing University of Chemical Technology, Beijing, CN.

29 Apr 2015 South China University of technology Guangzhou, CN.

26 Feb 2013 Department of Biological Applications and Technologies, University of Ioannina, GR.

ADMINISTRATIVE WORK

Participation in several committees and boards in the Department of Chemistry and the University of Crete. Some notable mentions:

2022-today Director of studies of the MSc curriculum "Protein Biotechnology" (deputy director between 2019-2022).

2018-today Member of the committee of undergraduate studies (coordinator of the committee since 2021).

2018-today Member of the steering committee of the "pedagogic and teaching competence program" of School of Sciences & Engineering (Coordinator between 2018-2021)

Since 2018 Member of 27 MSc and 12 doctoral examination boards (excluding the ones acting as supervisor).

OTHER SCIENTIFIC ACTIVITIES

Member of scientific forums

Since 2021 European Society of Applied Biocatalysis (ESAB) – *only up to three members per country allowed*
Since 2021 Global Talent Mentoring
Since 2009 European Federation of Biotechnology (EFB)
Since 2007 Hellenic Society of Biochemistry and Molecular Biology
Since 2007 Greek Lipid Forum
2016-2017 German Society for Biochemistry and Molecular Biology (GBM)

Editorial

- Biotechnology and Applied Biochemistry (Wiley), Associate Editor, since 2018.
- Experimental Results (Cambridge University Press), Reviewing Editor in Chemistry, since 2020.
- Frontiers in Catalysis, Associate Editor, since 2022.
- Catalysts (MDPI), Guest Editor of Special Issue "Biocatalysis for Industrial Applications", 2018.

Reviewer after invitation for

- Swiss National Science Academy (2013, 2016, 2019)
- Icelandic Research Fund (2016)
- Polish National Science Centre (2018)
- Croatian Science Foundation (2019, 2020)
- AQAS - Agentur für Qualitätssicherung durch Akkreditierung von Studiengängen e.V. (Agency for quality assurance through the accreditation of courses) (2022)
- >60 international peer-review journals: (http://www.publons.com/a/1301200/)

Most reviews for: Process Biochemistry, RSC Advances, Catalysts
Higher IF Journals: ACS Catalysis, Biotechnology Advances, Nature Catalysis, Nature Communications, PNAS.

PUBLICATIONS IN INTERNATIONAL JOURNALS

A45 N. Kaloudis, P. Zygouri, N. Chalmpes, K. Spyrou, D. Gournis, I.V. Pavlidis* (2022) Regulation of the catalytic behavior of (*S*)-selective amine transaminases through interactions with graphite oxide. *Frontiers in Catalysis*, https://doi.org/10.3389/fctls.2021.803850.

A44 H. Terholsen, J. Kaur, N. Kaloudis, A. Staudt, I.V. Pavlidis, U.T. Bornscheuer* (2022) An enzyme cascade reaction for the recovery of hydroxytyrosol derivatives from olive mill wastewater. *Chemie Ingenieur Technik* https://doi.org/10.1002/cite.202200069.

A44 H. Terholsen, J. Kaur, N. Kaloudis, A. Staudt, H. Müller, I.V. Pavlidis, U.T. Bornscheuer* (2022) Recovery of hydroxytyrosol from olive mill wastewater using the promiscuous hydrolase/acyltransferase PestE. *ChemBioChem*, **23**(13):e202200254.

A42 E. Konia, K. Chatzicharalampous, A. Drakonaki, C. Muenke, U. Ermler, G. Tsiotis. I.V. Pavlidis* (2021) Rational engineering of *Luminiphilus syltensis* (*R*)-selective amine transaminase for the acceptance of bulky substrates. *Chemical Communications*, **57**: 12948-12951 // **2021 Emerging Investigators**.

A41 I. Metaxas, E. Michailidi, D. Stavrou, I.V. Pavlidis* (2021) Educational reconstruction of size-depended-properties in nanotechnology for teaching in tertiary education. *Chemistry Teacher International*. DOI:10.1515/cti-2021-0011.

A40 Q. Tang, I. V. Pavlidis, C. Badenhorst*, U.T. Bornscheuer* (2021) From natural methylation to versatile alkylations using halide methyltransferases. *ChemBioChem*. **22**: 2584-2590 // **Issue's front cover**.

A39 Q. Tang, C. Grathwol, A.S. Aslan-Üzel, S. Wu, A. Link, I. V. Pavlidis*, C. Badenhorst*, U.T. Bornscheuer* (2021) Directed evolution of a halide methyltransferase enables biocatalytic synthesis of diverse SAM analogues. *Angewandte Chemie International Edition*. **60** (3): 1524-1527.

A38 K. Myrtollari, N. Katsoulakis, D. Zarafeta, I.V. Pavlidis, G. Skretas, I. Smonou* (2020) Activity and specificity studies of the new thermostable esterase EstDZ2. *Bioorganic Chemistry*. **104**: art. No. 104214.

A37 Q. Tang, Y.M. Vianney, K. Weisz, C.W. Grathwol, A. Link, U.T. Bornscheuer*, I.V. Pavlidis* (2020) Influence of substrate binding residues on the substrate scope and regioselectivity of a plant *O*-methyltransferase against flavonoids. *ChemCatChem.* **12**: 3721-3727.

A36 A. Su, S. Kiokekli, M. Naviwala, A.N. Shirke, I.V. Pavlidis*, R.A. Gross* (2020) Cutinases as stereoselective catalysts: Specific activity and enantioselectivity of cutinases and lipases for menthol and its analogs. *Enzyme and Microbial Technology*, **133**: 109467.

A35 Q. Tang, U.T. Bornscheuer*, I.V. Pavlidis* (2019) Specific residues expand the substrate scope and enhance the regioselectivity of a plant *O*-methyltransferase. *ChemCatChem*, 11(14): 3227-3233 // **Young Researchers Series**.

A34 P. Kelefiotis-Stratidakis, T. Tyrikos-Ergas, I.V. Pavlidis* (2019) The challenge of using isopropylamine as amine donor in transaminase catalyzed reactions. *Organic and Biomolecular Chemistry*, **17**: 1634-1642 // **New Talent Issue**.

A33 A. Su, T. Tyrikos-Ergas, A.N. Shirke, Y. Zou, A. Dooley, I.V. Pavlidis*, R.A. Gross* (2018) Revealing cutinases' capabilities as enantioselective catalysts. *ACS Catalysis*, **8**: 7944-7951.

A32 D. Merker, M. Kesper, L.L. Kailing, F.W. Herberg, J.P. Reithmeier, I.V. Pavlidis, C. Popov* (2018) Nanostructured modified ultrananocrystalline diamond surfaces as immobilization support for lipases. *Diamond and Related Materials*, **90**: 32-39.

A31 A.W.H. Dawood, M.S. Weiß, C. Schulz, I.V. Pavlidis, H. Iding, R.O.M.A. de Souza, U.T. Bornscheuer* (2018) Isopropylamine as amine donor in transaminase-catalyzed reactions: Better acceptance through reaction and enzyme engineering. *ChemCatChem*, **10** (18): 3943-3949 // **Hot Topic: Biocatalysis**.

A30 N. Noby*, H. Saeed*, A.M. Embaby, I.V. Pavlidis, A. Hussein (2018) Cloning, expression and characterization of cold active esterase (EstN7) from *Bacillus cohnii* strain N1: a novel member of family IV. *International Journal of Biological Macromolecules*, **120**: 1247-1255.

A29 L.L. Kailing, D. Bertinetti, C.E. Paul, T. Manszewski, M. Jaskolski, F.W. Herberg, I.V. Pavlidis* (2018) *S*-Adenosyl-L-homocysteine hydrolase inhibition by a synthetic nicotinamide cofactor biomimetic. *Frontiers in Microbiology*, **9**: 505.

A28 R. Lorenz, E.-W. Moon, J.J. Kim, S. Schmidt, B. Sankaran, I.V. Pavlidis, C. Kim*, F.W. Herberg* (2017) Mutations of PKA cyclic nucleotide binding domains reveal novel aspects of cyclic nucleotide selectivity. *Biochemical Journal*, **474** (14): 2389-2403.

A27 L.L. Kailing, D. Bertinetti, F.W. Herberg, I.V. Pavlidis* (2017) A coupled photometric assay for characterization of *S*-adenosyl-L-homocysteine hydrolases in the physiological hydrolytic direction. *New Biotechnology*, **39**: 11-17.

A26 M.S. Weiß, I.V. Pavlidis, P. Spurr, S.P. Hanlon, B. Wirz, H. Iding*, U.T. Bornscheuer* (2017) Amine transaminase engineering for spatially bulky substrate acceptance. *ChemBioChem*, **18**: 1022-1026.

A25 A.M. Knight, A. Nobili, T. van den Bergh, M. Genz, H.-J. Joosten, D. Albrecht, K. Riedel, I.V. Pavlidis, U.T. Bornscheuer* (2017) Bioinformatic analysis of fold type III PLP-dependent enzymes discovers multimeric racemases. *Applied Microbiology and Biotechnology*, **101**: 1499-1507.

A24 M.S. Weiß, I.V. Pavlidis, P. Spurr, S.P. Hanlon, B. Wirz, H. Iding*, U.T. Bornscheuer* (2016) Protein-engineering of an amine transaminase for the stereoselective synthesis of a pharmaceutically relevant bicyclic amine. *Organic and Biomolecular Chemistry*, **14**: 10249-10254.

A23 I.V. Pavlidis, M.S. Weiß, M. Genz, P. Spurr, S.P. Hanlon, B. Wirz, H. Iding*, U.T. Bornscheuer* (2016) Identification of (*S*)-selective transaminases for the asymmetric synthesis of bulky chiral amines. *Nature Chemistry*, **8(11)**: 1076-1082.

A22 Q. Tang, G.M. Popowicz, X. Wang, J. Liu, I.V. Pavlidis, Y. Wang* (2016) Lipase-driven epoxidation is a two-stage synergistic process. *Chemistry Select*, **1(4)**: 836-839.

A21 M. Patila, I.V. Pavlidis, A. Kouloumpis, K. Dimos, K. Spyrou, P. Katapodis, D. Gournis, H. Stamatis* (2016) Graphene oxide derivatives with variable alkyl chain length and terminal functional groups as supports for stabilization of cytochrome c. *International Journal of Biological Macromolecules*, **84**: 227-235.

A20 Y. Tao, R. Dong, I.V. Pavlidis, B. Chen*, T. Tan* (2016) Using imidazolium-based ionic liquids as dual solvent-catalysts for sustainable synthesis of vitamin esters: inspiration from bio- and organo-catalysis. *Green Chemistry* **18**: 1240-1248 // **Issue's front cover**.

A19 D. Last, J. Müller, A.W.H. Dawood, E.J. Moldenhauer, I.V. Pavlidis, U.T. Bornscheuer* (2016) Highly efficient and easy protease-mediated protein purification. *Applied Microbiology and Biotechnology* **100:** 1945-1953**.**

A18 S. Guo, J. Xu, I.V. Pavlidis, D. Lan, U. T. Bornscheuer, J. Liu*, Y. Wang* (2015) Structure of product-bound SMG1 lipase: active site gating implications. *FEBS Journal* **282**: 4538-4547.

A17 Y. Tao, G. Chen, I.V. Pavlidis, Y. Jiang, L. Qie, C. Cui, L. Liu, B. Chen*, T. Tan* (2015) A water-dependent kinetics guide complex lipase-mediated synthesis of biolubricants in a water activity control reactor. *Catalysis Science & Technology*, **5**: 5120-5128 // **Issue's inside front cover**.

A16 D. Lan, G.M. Popowicz, I.V. Pavlidis, P. Zhou, U.T. Bornscheuer, Y. Wang* (2015) Conversion of a mono- and diacylglycerol lipase into a triacylglycerol lipase by protein engineering. *ChemBioChem* **16**: 1431-1434.

A15 A. Nobili, Y. Tao, I.V. Pavlidis, T. van den Bergh, H.-J. Joosten, T. Tan, U.T. Bornscheuer* (2015) Simultaneous use of *in silico* design and a correlated mutation network as a tool to efficiently guide enzyme engineering. *ChemBioChem*, **16**: 805-810.

A14 M.S. Weiß, I.V. Pavlidis, C. Vickers, M. Höhne*, U.T. Bornscheuer* (2014) A glycine oxidase based high-throughput solid-phase-assay for substrate profiling and directed evolution of (*R*)- and (*S*)-selective amine transaminases. *Analytical Chemistry* **86**(23): 11847–11853 // **ACS Editors' choice**.

A13 I.V. Pavlidis, M. Patila, U.T. Bornscheuer, D. Gournis, H. Stamatis* (2014) Graphene-based nanobiocatalytic systems: Recent advances and future prospects. *Trends in Biotechnology* **32**(6): 312-320.

A12 M. Gall, M. Thomsen, C. Peters, I.V. Pavlidis, P. Jonczyk, P.P. Grünert, S. Beutel, T. Scheper, E. Gross, M. Backes, J.P. Ley*, J.M. Hilmer, G. Krammer, G.J. Palm, W. Hinrichs, U.T. Bornscheuer* (2014) Enzymatic conversion of

flavonoids using bacterial chalcone isomerase and enoate reductase. *Angewandte Chemie International Edition* **53**: 1429-1442.

A11 S. Hackenschmidt, E.J. Moldenhauer, G.A. Behrens, M. Gand, I.V. Pavlidis, U.T. Bornscheuer* (2014) Enhancement of promiscuous amidase activity of a *Bacillus subtilis* esterase by formation of a π-π network *ChemCatChem* **6**: 1015-1020. // **Special issue: Biocatalysis**.

A10 M.G. Gall, A. Nobili, I.V. Pavlidis, U.T. Bornscheuer* (2014) Improved thermostability of a *Bacillus subtilis* esterase by domain exchange. *Applied Microbiology and Biotechnology* **98**: 1719-1726.

A9 M. Patila, I.V. Pavlidis, E. K. Diamanti, P. Katapodis, D. Gournis, H. Stamatis* (2013) Enhancement of cytochrome c catalytic behaviour by affecting the heme environment using functionalized carbon-based nanomaterials. *Process Biochemistry* **48**(7): 1010-1017.

A8 A. Nobili, M.G. Gall, I.V. Pavlidis, M.L. Thompson, M. Schmidt, U.T. Bornscheuer* (2013) Use of "small but smart" libraries to enhance the enantioselectivity of an esterase from *Bacillus stearothermophilus* towards tetrahydrofuran-3-yl acetate. *FEBS Journal* **280**: 3084-3093.

A7 I.V. Pavlidis, T. Vorhaben, D. Gournis, G.K. Papadopoulos, U.T. Bornscheuer, H. Stamatis* (2012) Regulation of catalytic behavior of hydrolases through interactions with functionalized carbon-based nanomaterials *Journal of Nanoparticle Research* **14**(5): 1-10 // Article 842.

A6 I.V. Pavlidis, T. Vorhaben, T. Tsoufis, P. Rudolf, U.T. Bornscheuer, D. Gournis, H. Stamatis* (2012) Development of effective nanobiocatalytic systems through the immobilization of hydrolases on functionalized carbon-based nanomaterials. *Bioresource Technology* **115**: 164-171.

A5 I.V. Pavlidis, K. Tzafestas, H. Stamatis* (2010) Water-in-ionic liquid microemulsion-based organogels as novel matrices for enzyme immobilization. *Biotechnology Journal* **5**: 805-812.

A4 I.V. Pavlidis, T. Tsoufis, A. Enotiadis, D. Gournis*, H. Stamatis* (2010) Functionalized multi-wall carbon nanotubes for lipase immobilization. *Advanced Engineering Materials* **10**: B179-B183.

A3 A.A. Tzialla, I.V. Pavlidis, M. Felicissimo, P. Rudolf, D. Gournis, H. Stamatis* (2010) Lipase immobilization on smectite nanoclays: Characterization and application to the epoxidation of α-pinene *Bioresource Technology* **101**: 1587-1594.

A2 I.V. Pavlidis, D. Gournis, G.K. Papadopoulos, H. Stamatis* (2009) Lipases in water-in-ionic liquid microemulsions. Structural and activity studies *Journal of Molecular Catalysis B: Enzymatic* **60**: 50-56.

A1 E. Serefoglou, K. Litina, D. Gournis*, E. Kalogeris, A.A. Tzialla, I.V. Pavlidis, H. Stamatis*, E. Maccallini, M. Lubomska, P. Rudolf* (2008) Smectite clays as solid supports for immobilization of β-glucosidase: Synthesis, characterization and biochemical properties *Chemistry of Material* **20**: 4106-4115.

CHAPTERS IN INTERNATIONAL BOOKS

B8 Q. Tang, A.S. Aslan-Üzel, E.D. Schuiten, C.P.S. Badenhorst*, I.V. Pavlidis*, Uwe T. Bornscheuer* Chapter 22: Enzymatic photometric assays for the selective detection of halides, in *Methods in Molecular Biology* (Ed. H. Stamatis), Humana Press Inc., **2487**: pp. 361-375, ISSN: 10643745.

B7 I.V. Pavlidis. Chapter 47: Identification and evolution of biocatalysts of interest (2018) in *Advanced Nanotechnologies for Detection and Defense Against CBRN Agents* (Eds P. Petkov *et al.*), Springer, pp. 477-485, ISBN: 978-94-024-1298-7.

B6 I.V. Pavlidis, N.M. Hendrikse, P.O. Syrén. Chapter 5: Computational techniques for efficient biocatalysis (2018) in *Modern Biocatalysis: Advances Towards Synthetic Biological Systems* (Eds. G. Williams & M. Hall), RSC Catalysis Series, pp. 119-152, ISBN: 978-1-78262-726-5.

B5 M. Patila, G. Orfanakis, A. Polydera, I.V. Pavlidis, H. Stamatis. Chapter 6: Graphene-based nanobiocatalytic systems (2017) in *Biocatalysis & Nanotechnology* (Ed. P. Grunwald), Pan Stanford Series on Biocatalysis, pp. 243-277 ISBN: 978-9-814-61369-9.

B4 I.V. Pavlidis. Chapter 12: Catalysis (2016) in *Graphene oxide: Fundamentals and Applications* (Eds A. Dimiev and S. Eigler), Wiley-VCH Verlag, pp. 382-409 ISBN: 978-1-119-06940-9.

B3 I.V. Pavlidis, M. Gall, T. Geissler, E. Gross, U.T. Bornscheuer. Chapter 9: Flavonoid biotechnology – New ways to high added-value products (2016) in *Applied biocatalysis: from fundamental science to industrial application* (Eds. A. Liese *et al.*), Wiley-VCH Verlag pp. 179-198 ISBN: 978-3-527-33669-2.

B2 I.V. Pavlidis, M. Patila, A.C. Polydera, D. Gournis, H. Stamatis. Chapter 5: Immobilization of enzymes and other biomolecules on graphene (2014) in *Functionalisation of graphene* (V. Georgakilas ed.) Wiley-VCH Verlag, pp.139-172 ISBN: 978-3-527-33551-0.

B1 I.V. Pavlidis, A.A. Tzialla, A. Enotiadis, H. Stamatis, D. Gournis. Chapter 2: Enzyme immobilization on layered and nanostructured materials (2010) Biocatalysis in polymer chemistry (K. Loos ed.), Wiley-VCH Verlag, pp.35-64 ISBN: 978-3-527-32618-9.

PATENT APPLICATION

C1 U.T. Bornscheuer, I.V. Pavlidis, M.S. Weiß, H. Iding, B. Wirz, H.P. Steven, P. Spurr. (2016) Mutant transaminases as well as methods and uses relating thereto. PCT International application WO2016166120 A1; US application US2016304843 A1 (publication date: 20.10.2016).

ACTIVE PARTICIPATION IN CONFERENCES

Oral presentations denoted with blue (17 given by IVP, 6 of them invited)

D87 I. V. Pavlidis*. TBD. Novel enzymes 2023, Greifswald, DE // 28.31-03.2023. (**Invited oral presentation**)

D86 P. Kelefiotis-Stratidakis, V. Tsopanakis, N. Kaloudis, I.V. Pavlidis*. Investigation of the effect on nanomaterials on the catalytic behaviour of amine transaminases for establishment of biocatalytic processes. Amine 5.0, Groningen, NL // 28-30.11.2022. (Oral presentation)

D85 C. Angeli, T. Mertika, I.V. Pavlidis*. Stabilization and activity improvement of a Baeyer-Villiger monooxygenase by mutagenesis of the susceptible to oxidation residues around flavin. *BioCat2022*, Hamburg, DE // 28.08.-01.09.2022. (**Submitted as poster, selected as flash talk**)

D84 E. Konia, K. Chatzicharalampous, A. Drakonaki, C. Muenke, U. Ermler, G. Tsiotis, I.V. Pavlidis*. Engineering *Luminiphilus syltensis* (*R*)-selective amine transaminase for the acceptance of bulky substrates *BioCat2022*, Hamburg, DE // 28.08.-01.09.2022.

D83 N. Kaloudis, N. C. Liakouli, I. V. Pavlidis*. Studies on the immobilization of (S)-selective amine transaminases on graphite oxide and subsequent asymmetric synthesis. *BioCat2022*, Hamburg, DE // 28.08.-01.09.2022.

D82 A.G. Spanou, N.C. Liakouli, I.V. Pavlidis*. Immobilization of biotechnologically interesting lipases for the production of 2nd generation biodiesel. *BioCat2022*, Hamburg, DE // 28.08.-01.09.2022.

D81 H. Terholsen, J. Kaur, N. Kaloudis, A. Staudt, H. Müller, I.V. Pavlidis, U. T. Bornscheuer. Recovery of hydroxytyrosol from olive oil wastewater using the promiscuous hydrolase/acyltransferase PestE. *BioCat2022*, Hamburg, DE // 28.08.-01.09.2022. (**Poster award**)

D80 E. Konia, K. Chatzicharalampous, A. Drakonaki, C. Muenke, U. Ermler, G. Tsiotis, I.V. Pavlidis*. Engineering *Luminiphilus syltensis* (*R*)-selective amine transaminase for the acceptance of bulky substrates. *GRC Biocatalysis 2022 "Making Biocatalysis More Predictive: Accelerating Biocatalytic Solutions to Synthetic Challenges"*, Southern New Hampshire University, USA. 10-15.07.2022

D79 H. Terholsen, J. Kaur, N. Kaloudis, A. Staudt, H. Müller, I.V. Pavlidis, U.T. Bornscheuer. Recovery of hydroxytyrosol from olive oil wastewater using the promiscuous hydrolase/acyltransferase PestE. *3rd ComBioCat Symposium 2022 "Pathways to sustainable chemical synthesis"*, Rostock, Germany. 08-09.06.2022 (**Oral presentation by HT**)

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