

ZOUMPANIOTI Maria

PhD / Functional Research Scientist B'

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EDUCATION

2007: PhD in Biotechnology, National Technical University of Athens, Greece. PhD thesis: "Study of biologically active molecules immobilized in non-aqueous media: Microemulsions – Organogels", in Greek.

1999: Diploma in Chemical Engineering, National Technical University of Athens, Greece

APPOINTMENTS

2008 – 2013: Functional Research Scientist C'

2013 – Today: Functional Research Scientist B'

SCIENTIFIC INTERESTS – ACTIVITIES

- Enzymatic Bioconversions in non-conventional systems (microemulsions–organogels)
 - ✓ Production of high added value products e.g. phenolic acid esters, fatty acid esters or production of other products of industrial interest e.g. epoxides, monosterine, using lowwater content systems such as microemulsions and related organogels
- Enzyme Immobilization (natural polymers, mesoporous silica materials, colloids based on block copolymers)
 - ✓ Study of the activity of lipases entrapped in microemulsions based on surfactant e.g. lecithin, AOT or surfactantless microemulsions, and lipases immobilized in

microemulsion-based organogels. Lipase immobilization on mesoporous silica materials.

- ✓ Lipase encapsulation in colloids based on biocompatible block copolymers.
- Structural studies of microemulsions and enzymes
 - ✓ Structural studies of microemulsions and enzyme-containing microemulsions using the fluorescence energy transfer technique, fluorescence spectroscopy, EPR spectroscopy.
 - ✓ Structural studies of the organogels using Differential Scanning Calorimetry.
- Biotechnology (Cultivations – Biodiesel)
 - ✓ Analysis of Biodiesel produced by microalgae and other microorganisms (nannochloropsis)

OTHER SCIENTIFIC ACTIVITIES

Reviewer of International scientific journals

Reviewer of articles in the journals: Applied Biochemistry and Biotechnology, World Journal of Microbiology and Biotechnology, Process Biochemistry

Reviewer of International funding projects

Reviewer of Greek (GSRT) research projects

Organization of Conferences

Member of the Organizing Committee of the 2nd Hellenic Conference of the Greek Lipid Forum "Fats, Lipids and Oils: Present and Future"

Patent

Filippou C., Xenakis A, Zoumpanioti M. (2013) "Immobilized catalyst in a continuous flow system for the synthesis of high added value products". OBI, 20130100305

Awards

3rd Poster presentation award for the work "Chemo-enzymatic epoxidation of Oleic acid catalyzed by *C. antarctica* lipase encapsulated in microemulsion-based organogels", I. Zampakidi, M. Zoumpanioti, A. Xenakis, 2nd Food Chemistry and Biotechnology ERA-Workshop (FCUB), Belgrade, Serbia, October 2011

Mobility

1 month at the Laboratory of Organic and Pharmaceutical Chemistry, Pharmaceutical Department, Complutense University, Madrid, Spain. Supervisor: Prof. Jose Vicente Sinisterra Gago.

2 months at the Laboratory of Organic Chemistry, Institute of Physical and Theoretical Chemistry, University of Regensburg, Germany. Supervisor: Prof. Werner Kunz.

1 month at the Laboratory of Colloids, Department of Physical Chemistry, University of Nancy, France. Supervisor: Prof. Marie Joe Stébé.

Team member in 11 Founded Projects

PUBLICATIONS

11 publications in International refereed journals

1. I. Itabaiana-Jr, K.M. Gonçalves, Y.M.L. Cordeiro, **M. Zoumpanioti**, I.C.R. Leal, L.S.M. de Miranda, R.O.M.A de Souza, A. Xenakis, "Kinetics and mechanism of lipase catalyzed monoacylglycerols synthesis", *J Mol Catal B: Enzymatic*, **2013**, *96*, 34-39
2. **M. Zoumpanioti**, H. Stamatis, A. Xenakis, Review "Microemulsion-based organogels as matrices for lipase immobilization", *Biotechnology Advances*, **2010**, *28*, 395-406
3. F. Michaux, **M. Zoumpanioti**, M. Papamentzelopoulou, M.J. Stébé, J.L. Blin, A. Xenakis, "Immobilization and activity of *Rhizomucor miehei* lipase. Effect of the matrix properties prepared from nonionic fluorinated surfactants", *Process Biochemistry*, **2010**, *45*, 39-46
4. **M. Zoumpanioti**, E. Merianou, T. Karandreas, H. Stamatis, A. Xenakis, "Esterification of phenolic acids catalyzed by lipases immobilized in organogels", *Biotechnol Lett*, **2010**, *32*, 1457-1462
5. V. Papadimitriou, S. Pispas, S. Syriou, A. Pournara, **M. Zoumpanioti**, T.G. Sotiroudis, A. Xenakis, "Biocompatible microemulsions based on limonene: Formulation, structure and applications", *Langmuir*, **2008**, *24*, 3380-3386
6. **M. Zoumpanioti**, P. Parmaklis, P. Domínguez de María, H. Stamatis, J.V. Sinisterra, A. Xenakis, "Esterification reactions catalyzed by lipases immobilized in organogels. Effect of temperature and substrate diffusion", *Biotechnol Lett*, **2008**, *30*, 1627-1631
7. C. Blattner, **M. Zoumpanioti**, J. Kröner, G. Schmeer, A. Xenakis, W. Kunz, "Biocatalysis using lipase encapsulated in microemulsion-based organogels in supercritical carbon dioxide", *Journal of Supercritical Fluids*, **2006**, *36* (3), 182-193
8. **M. Zoumpanioti**, H. Stamatis, V. Papadimitriou, A. Xenakis, "Spectroscopic and catalytic studies of lipases in ternary hexane – 1-propanol – water microemulsion-like systems", *Colloids and Surfaces B: Biointerfaces*, **2006**, *47*, 1-9
9. **M. Zoumpanioti**, M. Karali, H. Stamatis, A. Xenakis, "Lipase biocatalytic processes in surfactantless microemulsion-like ternary systems and related organogels", *Enzym Microb Technol*, **2006**, *39*, 531-539
10. **M. Zoumpanioti**, E. Karavas, C. Skopelitis, H. Stamatis, A. Xenakis, "Lecithin organogels as model carriers of pharmaceuticals", *Prog Colloid Polymer Sci*, **2004**, *123*, 199-202
11. Ch. Delimitsou, **M. Zoumpanioti**, A. Xenakis, H. Stamatis, "Activity and stability studies of *Mucor miehei* lipase immobilized in novel microemulsion-based organogels", *Biocatal Biotransform*, **2002**, *20* (5), 319-327

Announcements in Conferences: Total number of abstracts: 41