Curriculum Vitae – ELENI F. ILIOPOULOU

Dr Eleni F. Iliopoulou graduated the Dept. of Chemical Engineering at Aristotle University of Thessaloniki (AUTH) in 1996. She obtained a Master degree in Materials Physics (2001) and her Ph.D. in Chemical Engineering (2004) from the Aristotle University of Thessaloniki. Since 2008 she is appointed a researcher position (today as an Associate Researcher) in the Laboratory of Environmental Fuels and Hydrocarbons (LEFH) of the Chemical Process and Energy Resources Institute (CPERI) at the Centre for Research & Technology Hellas (CERTH). She has developed and is currently responsible for the Catalyst Development Laboratory in LEFH, while engaged in the wide research field of Applied Catalysis emphasizing on the Development of Novel Catalytic Systems for Energy, Renewables and Environmental Processes. Her specialty areas focus on Synthesis and Compositional, Structural, Morphological and Chemical Characterization of Catalysts with conventional and advanced techniques, Evaluation, Characterization and Mechanistic Studies of Catalytic Performance. Besides that she is also specialized in Process simulation in bench-scale units additionally investigating catalysts' deactivation problems. Dr. Iliopoulou is the co-author of 28 papers in peer reviewed, scientific journals, 41 in international conference proceedings, 25 in national conference proceedings and 4 book chapters, concerning heterogeneous catalysis, catalyst deactivation and biomass-to-fuels & chemicals pyrolysis process. She has independently obtained various competitive national research grants, while she has actively participated in several extended European research consortiums and National research projects (20). During her past and recent research activity, she had the opportunity to develop and expand a valuable network of collaborators both in Greece and abroad, including worldwide appreciated academic and research institutions and well known companies. Her published work has been worldwide acknowledged with more than 250 citations (excluding self-citations, h-index= 10). She is a regular reviewer in relevant scientific Journals and she is/was a member in the organizing and scientific committees of international and national scientific conferences. She has completed the subsidiary supervision of two PhD students, working on Catalyst Deactivation and the Development of novel catalysts for the reduction of NOx emissions from industrial flue gases, while she is currently supervising a starting PhD thesis on the Development of Catalysts for the simultaneous reduction of N_2O and NOx emissions. She also supervised several Diploma Thesis from the Chemical Engineering Department and the Department of Chemistry, AUTH dealing with Heterogeneous Environmental Catalysis, while since 2008 she is a Collaborating Educational Personnel in the "Catalysis and Environment" Master Course of the Hellenic Open University. Finally, she is a Member of the Technical Chamber of Greece and the Pan-Hellenic Association of Chemical Engineers and an ex-Member of the board of directors of the Pan-Hellenic Association of Chemical Engineers.

RESEARCH FIELDS OF INTEREST

Heterogeneous Catalysis Development of new catalytic systems for energy and environmental processes

Synthesis –Characterization –Applications of catalytic materials

Material synthesis applying several methods: spray pyrolysis, ion-exchange, dry/wet impregnation, co-precipitation, spray pyrolysis

Compositional/Structural/Morphological characterization of materials applying several methods: ICP-AES, Nitrogen physi-sorption, XRD, SEM, FTIR

Evaluation, characterization, mechanistic studies of catalytic materials applying several techniques: temperature-programmed reduction/desorption/oxidation/surface reaction (H_2 TPR-TPD, TPO, TPSR) via adsorption-desorption of reactants in combination with mass spectrometer, gas chromatography, infrared spectroscopy, FTIR-pyridine adsorption for acidity measurement

Design and synthesis of multifunctional catalytic materials – formation of mesoporosity in microporous (zeolitic) materials via the alkaline/acid treatment, synthesis and investigation of basic zeolites

Process simulation in bench-scale units

Fluid Catalytic Cracking (FCC), deactivation of FCC catalysts by deleterious FCC feed metals, laboratory deactivation techniques, elucidation of deactivation and metal passivation methods, regeneration of spent FCC catalyst, development and evaluation of of deNOx, deSOx FCC catalytic additives

Biomass catalytic pyrolysis, development of micro/mesoporous catalytic materials incorporating various metals (Ni, Al, Co, Fe, Cu) for the *in situ* upgrading of bio-oil or/and the production of fine chemicals. Bio-oil utilization as co-feeding in FCC unit, improvement of bio-oil miscibility with conventional fuels.

2^{nd} generation biofuels by upgrading a BTL (biomass-to-liquids) naphtha via the Hydro-isomerization process. Development of novel bimetallic zeolitic catalysts, tolerant to poisons (S, H_2O and aromatics).

Development-Optimization of Environmental Techniques

Development and evaluation of catalysts for the reduction of toxic pollutants and green-house gases (NOx,

SOx, N_2O, CO, CO_2) emitted from stationary and mobile sources.
Application of the selective catalytic reduction of NOx with hydrocarbons, catalytic decomposition of NOx and N_2O to N_2 and O_2, oxidation of CO and unburned hydrocarbons, SOx capture via adsorption, reduction of CO_2 emissions via development of biofuels.

REVIEWER IN SCIENTIFIC JOURNALS

1. Applied Catalysis A: General
2. Applied Catalysis B: Environmental
3. Industrial & Engineering Chemistry Research
4. Catalysis Today
5. Microporous & Mesoporous Materials
6. Energy & Fuels
7. Journal of Molecular Catalysis A: Chemical,
8. Environmental Science & Technology
9. Chemical Engineering Communications
10. Journal of Catalysis, etc.

SCIENTIFIC & ADMINISTRATIVE ACTIVITIES

1. Scientific & Organizing committee of ***CLEAR European summer school- EFCATS/ACENET*** (2009).
2. Greek representative in ***COST Action Chemistry D36*** (2009 – 2011).
3. Departmental coordinator of invited scientific lectures in **CPERI/CERTH** (2008 – present)
4. Organizing committee of the International ***CAT4BIO Conference***, Thessaloniki, Greece (2012)
5. Organizing committee of the ***COST Action*** international workshop ***UBIOCHEM-III*** (2012).
6. Scientific committee of the **12th Panhellenic Symposium on Catalysis** (2012)

SOCIETY MEMBERSHIPS

1. Technical Chamber of Greece and Hellenic Association of Chemical Engineers (1998).
2. Greek Catalysis Society (2004 – present).

Selected Publications – ELENI F. ILIOPOULOU

PUBLICATIONS IN SCIENTIFIC PEER-REVIEWED JOURNALS

1. Mesopore-modified Mordenites as catalysts for catalytic pyrolysis of biomass and cracking of vacuum gas oil processes, S. Stefanidis, K. Kalogiannis, **E.F. Iliopoulou***, A.A. Lappas, J. Martínez Triguero, M.T. Navarro, A. Chica, F. Rey, *accepted in Green Chemistry*, Green Chem., DOI:10.1039/C3GC40161H
2. Producing High Quality Biofuels: Pt-based Hydroisomerization Catalysts Evaluated using BtL-Naphtha Surrogates, **E.F. Iliopoulou***, E. Heracleous, A. Delimitis, A.A. Lappas Applied Catalysis B: Environmental, *in Press*, http://dx.doi.org/10.1016/j.apcatb.2013.03.026
3. Second-generation biofuels by co-processing catalytic pyrolysis oil in FCC units, N. Thegarid, G. Fogassy, Y. Schuurman*, C. Mirodatos, S. Stefanidis, **E.F. Iliopoulou**, K. Kalogiannis, A.A. Lappas Applied Catalysis B: Environmental, *in Press*, http://dx.doi.org/10.1016/j.apcatb.2013.01.019
4. Upgrading of Fischer-Tropsch synthesis bio-waxes via catalytic cracking: Effect of acidity, porosity and metal modification of zeolitic and mesoporous aluminosilicate catalysts, V.G. Komvokis, S. Karakoulia, **E.F. Iliopoulou**, M.C. Papapetrou, I.A. Vasalos, A.A. Lappas, K.S. Triantafyllidis* Catalysis Today, 196 (1) (2012) 42-55.
5. Catalytic upgrading of biomass pyrolysis vapors using transition metal-modified ZSM-5 zeolite, **E.F. Iliopoulou***, S.D. Stefanidis, K.G. Kalogiannis, A. Delimitis, A.A. Lappas, K.S. Triantafyllidis, Applied Catalysis B: Environmental 127 (2012) 281– 290
6. Catalytic pyrolysis of biomass for transportation fuels, A.A. Lappas*, K.G. Kalogiannis, **E.F. Iliopoulou,** K.S. Triantafyllidis, S.D. Stefanidis, *WIREs Energy Environ* 2012, 1: 285–297 doi: 10.1002/wene.16
7. Correlation of Surface Characteristics with Catalytic Performance of Potassium Promoted Pd/Al_2O_3 Catalysts: The Case of N_2O Reduction by Alkanes or Alkenes, G. Pekridis, N. Kaklidis, M. Konsolakis, **E.F. Iliopoulou,** I.V. Yentekakis, G.E. Marnellos Topics in Catalysis 54(16-18) (2011) 1135.
8. In-situ upgrading of biomass pyrolysis vapors: catalyst screening on a fixed bed reactor, S.D. Stefanidis, K.K. Kalogiannis, **E.F. Iliopoulou**, A.A. Lappas, P.A. Pilavachi, Bioresource Technology 102(17) (2011) 8261.
9. **"Advanced Artificial Deactivation of FCC Catalysts»** A.C. Psarras, E.F. Iliopoulou, A.A. Lappas, Advances in Fluid Catalytic Cracking: Testing, Characterization and Environmental Regulations" Ed. Mario L. Occelli, CRC Press Taylor & Francis Group 2010.
10. **"Catalysts in Biomass Pyrolysis",** A.A. Lappas, E.F. Iliopoulou and K. Kalogiannis in "Thermochemical Conversion of Biomass to Liquid Fuels and Chemicals", Ed. Mark Crocker, RSC Publishing Eds. 2010.