

APPLIED CATALYSIS IN GREECE 2002



Presentation by

Prof. Iacovos A. Vasalos
CPERI & Department of Chemical Engineering
Aristotle University of Thessaloniki (AUTH)

April 8, 2002

APPLIED CATALYSIS IN GREECE 2002

Areas of Application Focus

	Academic Institutions	Areas of Application Focus
1	<p>Chemical Process Engineering Research Institute (C.P.E.R.I.) and Aristotle University of Thessaloniki (AUTH) Dept. of Chem. Engineering</p> <p>P.O. Box 361, 570 01 Thermi, Thessaloniki Greece</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Production of clean fuels <input type="checkbox"/> Natural gas conversion to Syngas and Hydrogen <input type="checkbox"/> Biomass: Thermochemical conversion for producing fuels and chemicals <input type="checkbox"/> Environmental technologies of gaseous pollutants(DES_{O_x}-DENO_x) <p>Contact person: Name: Prof. Iacovos Vasalos e-mail: vasalos@certh.gr telephone: +30 0310 498211 website: www.cperi.certh.gr</p>
2	<p>National Technical University of Athens (NTUA) School of Chemical Engineering</p> <p>9 Heroon Polytechniou str. 157 80 Athens Greece</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Automobile and industrial exhaust gas treatment <input type="checkbox"/> Environmental technologies of waste water purification <input type="checkbox"/> Hydrotreating of petroleum fractions and residue <input type="checkbox"/> Catalytic hydrogenation of benzene in gasoline <input type="checkbox"/> Production of hydrogen from waste gases and natural gas <input type="checkbox"/> 'Synthesis gas' production <input type="checkbox"/> Biomass: Thermochemical transesterification of bio-oils into biodiesel <p>Contact person: Name: Prof. N.G. Papayannakos Tel.: (+3010) 772 3239 Fax: (+3010) 772 3155 Email : npap@central.ntua.gr</p>
3	<p>University of Ioannina Department of Chemistry</p> <p>University Campus P.O.Box 1186 45 110 Ioannina Greece</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Development of zeolite catalysts with controlled de-alumination <input type="checkbox"/> Development of metal-substituted MCM solids with high surface metal dispersion and surprisingly effective reaction rates <input type="checkbox"/> Development of high surface area manganese and iron-based oxide/perovskite mixed valence catalysts <input type="checkbox"/> Characterization of the catalyst prepared by various techniques <input type="checkbox"/> Laboratory scale tests for the prepared catalysts for acid-catalyzed reactions as well as redox reactions like deNO_x with reducing agents H/C and CO <input type="checkbox"/> Photocatalytic studies for decomposition of pesticides and other micropollutants in environmental liquid samples using commercial TiO₂ as photocatalysts <p>Contact person: Name: Prof. Philippos Pomonis email : ppomonis@cc.uoi.gr Phone : +30651098350 Fax : +30651098795</p>

4	<p>University of Patras Dept. of Chemical Engineering</p> <p>GR-26500 Patras Greece</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Design and synthesis of materials <input type="checkbox"/> Characterization of materials <input type="checkbox"/> Catalyst screening and evaluation <input type="checkbox"/> Design, construction and operation of advanced reactors <input type="checkbox"/> Development of kinetic and reactor models <p><u>Contact person:</u> Name: Prof. Xenophon E. Verykios e-mail: Verykios@chemeng.upatras.gr Telephone/Fax: +3 0610 991527 website: www.chemeng.upatras.gr</p>
5	<p>Foundation for Research an Technology Hellas (FORTH) Institute of Chemical Eng. & High Temperature Processes (ICEHT)</p> <p>P.O. Box 1414, Stadiou St., Platani, 26 500 Rio-Patras, GREECE</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Catalysts for fuel cell systems <input type="checkbox"/> Catalysts and sorbents for pollution control in industrial streams <input type="checkbox"/> Catalysts for hydrogen production processes <input type="checkbox"/> Hydrotreatment of oil fractions <input type="checkbox"/> Modelling and simulation tools for catalyst characterization and transport properties prediction <p><u>Contact person:</u> Name: Prof. Stratis V. Sotirchos e-mail: svs2@iceht.forth.gr or svs2@che.rochester.edu Tel.: +30 0610 965202; FAX: +30 0610 965 223 website: www.iceht.forth.gr</p>

APPLIED CATALYSIS IN GREECE 2002

Advance Techniques Employed

	Academic Institutions	Advance Techniques Employed
1	Chemical Process Engineering Research Institute (C.P.E.R.I.) and Aristotle University of Thessaloniki (AUTH) Dept. of Chem. Engineering	<ul style="list-style-type: none"> <input type="checkbox"/> Mechanistic and kinetic studies <input type="checkbox"/> Fully automated catalytic reactor systems <input type="checkbox"/> Characterization and modelling of heterogeneous catalysts at intraparticle level <input type="checkbox"/> Reactor Modelling
2	National Technical University of Athens (NTUA) School of Chemical Engineering	<ul style="list-style-type: none"> <input type="checkbox"/> Kinetic Studies and Catalyst Performance <input type="checkbox"/> Evaluation RTD techniques and tools <input type="checkbox"/> Fully automated mini- and pilot scale <input type="checkbox"/> Reactor scale-up and simulation tools <input type="checkbox"/> Porous Materials Characterization <input type="checkbox"/> Reactor Modeling
3	University of Ioannina Department of Chemistry	<ul style="list-style-type: none"> <input type="checkbox"/> Zeolite synthesis <input type="checkbox"/> Characterization <input type="checkbox"/> Kinetics <input type="checkbox"/> Modeling
4	University of Patras Dept. of Chemical Engineering	<ul style="list-style-type: none"> <input type="checkbox"/> Determination of the catalytically active sites <input type="checkbox"/> Adsorption/desorption of reactants and products on the active sites <input type="checkbox"/> Identification of adsorbed species under reaction conditions <input type="checkbox"/> Determination of reactivity of surface species formed under reaction conditions <input type="checkbox"/> Investigation of surface processes <input type="checkbox"/> Catalyst evaluation and kinetic studies <input type="checkbox"/> Reactor modelling
5	FORTH / Institute of Chemical Eng. & High Temperature Processes (ICEHT)	<ul style="list-style-type: none"> <input type="checkbox"/> Catalyst preparation methods <input type="checkbox"/> Mechanistic and kinetic studies <input type="checkbox"/> Chemical and surface analysis of catalysts <input type="checkbox"/> Characterization and modelling of the pore structure of catalysts <input type="checkbox"/> Transport and reaction modelling

APPLIED CATALYSIS IN GREECE 2002

Academic Depth and Breadth

	Academic Institutions	Academic depth and breadth
1	Chemical Process Engineering Research Institute (C.P.E.R.I.) and Aristotle University of Thessaloniki (AUTH) Dept. of Chem. Engineering	Professor I.A. Vasalos (AUTH & CPERI) Prof. M. Stoukidis (AUTH) Ass. Prof. A. Lemonidou (AUTH) Dr A. Lappas (Assoc. Researcher, CPERI) Dr L. Nalbandian (Assoc. Researcher, CPERI) Dr E. Kikkinidis (Assoc. Researcher, CPERI) Dr P. Voutetakis, (Assoc. Researcher, CPERI) Dr K. Triantafyllidis (Ass. Researcher, CPERI) Dr D. Iatridis (Assoc. Functional Scientist, CPERI) S. Vousvoukis, Senior Chemical Engineer 7 Chemical Engineers 10 Ph.D. Researchers 3 Chemists 5 Graduate Students 26 Technical Support Personnel Subtotal: 60
2	National Technical University of Athens (NTUA) School of Chemical Engineering	Prof. N.G.Papayannakos Assoc. Prof. G.P.Androutsopoulos Assoc. Prof AC.I. Philippopoulos Assist. Prof. H. Grigoropoulou 10 Ph.D. Researchers 15 Graduate Students 2 Technicians Subtotal: 32
3	University of Ioannina Department of Chemistry	Prof. P.J. Pomonis Prof. N. Evmiridis Assoc. Prof. T.A. Albanis Ass. Prof. D. E. Petrakis Ass. Prof. T. Vaimakis Dr A. Ladavos Dr. K. Kolonia 15 Ph.D Students 3 Technical Personnel Subtotal: 24
4	University of Patras Dept. of Chemical Engineering	Prof. X.E. Verykios Prof. C.G. Vayenas Assistant Prof. S. Bebelis Lecturer D. Kondarides 4 Postdoctoral Researchers 1 Chemical Engineers 12 Graduate students Subtotal: 21

5	FORTH / Institute of Chemical Eng. & High Temperature Processes (ICEHT)	Prof. S. Sotirchos Prof. A. Payatakes Dr. V. Burganos Dr. Th. Ioannides Dr. S. Neophytides Dr. Ch. Tsakiroglou Dr. G. Konstantinidis Dr. A. Siokou Prof. A. Lycourghiotis Assoc. Prof. Ch. Kordulis Assist. Prof. Ch. Papadopoulou Assist. Prof. H. Matralis Prof. S. Ladas Assoc. Prof. S. Kennou 43 Research Personnel 7 Technical Support Personnel Subtotal: 64
	Totals:	204

APPLIED CATALYSIS IN GREECE 2002

Funding

	Academic Institutions	Funding					
		National		EU		Industry	
		No	Funding KEuro	No	Funding KEuro	No	Funding KEuro
1	Chemical Process Engineering Research Institute (C.P.E.R.I.) and AUTH - Dept. of Chem. Engineering	4	2657	12	2595	9	3810
2	National Technical University of Athens (NTUA) School of Chemical Engineering	2	80	8	390	5	310
3	University of Ioannina Department of Chemistry	7	379	5	564	5	500
4	University of Patras Dept. of Chemical Engineering	6	1150	6	1066	5	455
5	FORTH / Institute of Chemical Eng. & High Temperature Processes (ICEHT)	8	1906	19	557	2	68
	Totals :	27	6172	50	5172	26	5143

APPLIED CATALYSIS IN GREECE 2002
Publications in refereed journals (1997-2001)

	Academic Institutions	Publications in refereed journals (1997-2001)
1	C.P.E.R.I. – AUTH	86
2	NTUA	60
3	University of Ioannina	72
4	University of Patras	98
5	FORTH / ICEHT	100
	Totals :	416