Curriculum Vitae

IOANNIS V. YENTEKAKIS

Professor of Physical Chemistry

(Heterogeneous Catalysis & Electrocatalysis; Surface Science; Nano-materials; Sustainable Energy; Fuel Cells)

Member of the University Council, TUC

Director: Laboratory of Physical Chemistry & Chemical Processes

TECHNICAL UNIVERSITY OF CRETE (TUC)

School of Chemical & Environmental Engineering

73100 Chania, Crete, Greece

SUMMARY:

Professor Ioannis V. Yentekakis has born in 1960 in Crete, Greece. He graduated in 1983 from the Department of Chemical Engineering, **University of Patras**, where in 1983-1987 he elaborated his Ph.D. under the supervision of Professor C.G. Vayenas. In 1987-1888 he was employed as postdoctoral fellow in the Department of Chemical Engineering at **Princeton University, NJ, USA**. In 1988 he returned to Greece, joined the ICE-HT/FORTH in Patras and the department of Chemical Engineering, University of Patras as a postdoctoral fellow and lecturer in both institutions. In 1995-2001 he served as Faculty Member (Lecturer and Assistant Professor) in the field of "Catalytic and Electrocatalytic Processes" in the department of Chemical Engineering, University of Patras. Then, in 2001 he was elected as Associate Professor in the Technical University of Crete (TUC) in the field of "Physical Chemistry" and in 2006 as Full Professor in the same field and University. In 2013 he moved to the School of Chemical & Environmental Engineering of TUC, where he is working up to today. For many years (1989-today), he sustains very close collaboration (frequent visits as Visiting Professor) with the department of Chemistry, **Cambridge University, UK** (Prof. R.M. Lambert).

Prof. Yentekakis work is related with extended teaching (>110 under- and post-graduate semester courses of several titles), administrative responsibilities (e.g., Chairman, University Senate and University Council regular member) and research activities. His research activities lie mainly in the scientific areas of **Heterogeneous Catalysis and Electrocatalysis; Physical Chemistry of Surface and Interfaces; Chemical Kinetics, Materials Technology and Engineering; Reactors and Processes Engineering, Renewable Energy, etc**. In particular, his research interests and objectives are to discover, elucidate, understand and exploit surface, catalytic, electrocatalytic and promotional phenomena over complex composites and nano-structured materials. It involves determination of the electronic structure of adsorbed and reacting surface species as a function of reaction variables, especially in relation to reactivity/selectivity and molecular mechanisms, heterogeneous catalysis, environmental protection, etc. Aspects addressed in his projects, quite often have direct and immediate relevance to important technological applications. Current research includes investigation of surface-induced and support-mediated promotional effects and their synergy in heterogeneous catalysis/electrocatalysis; De-NOx and De-N_2O processes; natural gas, biogas and higher hydrocarbons reforming processes, emissions control systems, fuel cells. Surface and catalytic phenomena are studied by advanced analytical, microscopic and spectroscopic methods such as high resolution electron microscopy (HREM), in situ Defuse Reflectance Infrared Fourier Transform Spectroscopy (DRIFTS), X-ray photoelectron spectroscopy (XPS) X-ray diffraction (XRD), X-ray fluorescence (XRF), Physi-Chemi-sorption, Temperature-Programmed Desorption (TPD) and other techniques. In brief his research interests and activities can be entitled as:

- Heterogeneous catalysts synthesis, design and development: Synthesis of enhanced catalytic/electrocatalytic properties (nano-) composites; structure, morphology, physicochemical characterization and evaluation of their catalytic/electrocatalytic performance under selected reactions relevance to important technological applications.
- Behavior, physical and morphological properties of surfaces and interfaces.
- Promotion and its origin in heterogeneous catalysis and electrocatalysis.
- Fuel Cells science and technology.
- Hydrogen energy, biofuels, natural gas, hydrocarbons reforming,
- CO_2 capture and utilization,
- Biogas upgrading and valorization
- Chemical and Processes Engineering.

His research work has been published in **127 papers in international peer-reviewed journals (mean IF/paper=8.832)**, which has been acknowledged with more than **5270 citations , h-index = 44 (Google scholar)**. Special articles in scientific journals have been written by others exclusively about this research. He has also published >**150 papers in international and national conference proceedings**, **1 invited monograph** in international Journal, **5 chapters in international Handbooks** and **3 international patents**, while he has given **many** invited talks in conferences and institutions. He is **Specilaty Chief-Editor** of the journal of ***Frontiers in Environmental Chemistry: Catalytic Remediation***, **Section Editor-in-Chief Editor** of **Nanomaterials** (MDPI) and Editorial Board Member in 8 additional interational journals: **Molecules** (MDPI), **Catalysts** (MDPI), **Reactions** (MDPI), **Coatings** (MDPI), **Catalysis Research** (LiDSEN), etc. He is also regular reviewer for more than 70 scientific Journals (>400 reviews) and for several research funding agencies (>400 proposals' reviews). He was member in the organizing and scientific committees and/or session chairman of numerous international and national scientific conferences. He has **supervised 8 Ph.D., >50 M.Sc., >70 diploma theses** and **developed 2 laboratories** (at University of Patras and Technical University of Crete). He was member of the team awarded in 1992 by the National Athens Academy of Science with the Medal and Prize of chemistry. He has participated as senior key-researcher, principal investigator or program coordinator in over **36 research grants** (**21 as coordinator**) awarded by The European Union, The British Council, The Greek Ministry of Education and The Greek Ministry of Development-GSRT, etc. He develops and expands a valuable network of collaborators both in Greece and abroad, including worldwide appreciated academic and research institutions or companies.

Professor Yentekakis is/was **Guest Editor in 7 specific topics (Special Issues)** in international journals, namely "Advanced Utilization and management of Biogas" (*Frontiers in Environmental Science*), "Emissions Control Catalysis" (*Catalysts*, MDPI journal), "Noble Metal Catalysts" (*Catalysts*, MDPI journal), "Advances in heterocatalysis by nanomaterials" (Nanomaterials MDPI), "Nanomaterials in Catalytic Applications" (Catalysts MDPI), "Recent Advances in Environmental Nanoscience and nanotechnology" and ''Nanocatalysis for Environmental Protection, Energy, and Green Chemistry". He has received "Certificate of Recognition" at the 6th International Conference on Environmental Chemistry and Engineering, Rome, Italy 2017, where he was invited to give a plenary lecture.

Professor Yentekakis had a key-inventor role in several new physicochemical phenomena, with high scientific and practical impact, as for example:

(i) The discovery of Non-Faradaic Electrochemical modification of Catalytic Activity" (NEMCA) or "Electrochemical Promotion" in Heterogeneous Catalysis [C.G. Vayenas, S. Bebelis, I.V. Yentekakis and H-G. Lintz, Catal. Today, 111, 303-445 (1992)],

(ii) The development of a direct catalytic process for the conversion of methane to ethylene with >85% yield [Y. Jiang, I.V. Yentekakis and C.G. Vayenas, Science, 264, 1563-1566 (1994); "Chemical Engineers near Holy Grail", Chem. & Ind., 12 p.444 (1994)],

(iii) The development of several novel fuel cells, such as: the direct H_2S-fuel cell; the direct biogas fuel cell (internal dry reforming of methane); the direct coal gasification fuel cell [e.g., "Applied Highlights: a selection of the topics from the chemical literature", Chem. & Ind., 17, 571-572 (1989); "A new process for direct coal gasification", Platinum Metals Review, 34, p. 35 (1990)],

(iv) The development of simple (monometallic), economic and extremely active and selective automotive exhaust catalytic converters [e.g., V. Matsouka, M. Konsolakis, R.M. Lambert, I.V. Yentekakis, Appl. Catal. B 84, 715-722 (2008)], etc.

(v) Catalyst nano-particles stabilization against thermal sintering [I. V. Yentekakis, G.i Goula, P. Panagiotopoulou, S.a Kampouri, M.J. Taylor, G. Kyriakou, R. M. Lambert, *Applied Catalysis B: Environmental,* 192 (2016) 357-364; Yentekakis et al., Catalysis Letters, 148 (2018) 341-347]

PERSONAL:

NATIONALITY	**:**	Greek
Born	**:**	Crete, November 28, 1960.
Current Address	**:**	Scholl of Chemical & Environmental Engineering, Technical University of Crete, 73100 Chania, Crete, Greece Tel.: +30 28210 37752, Fax: +30 28210 37844 ***e***-mail: yyentek@isc.tuc.gr

UNIVERSITY EDUCATION:

- **1978-1983:** B.S. Diploma in Chemical Engineering, University of Patras, Greece
- **1983-1987:** Ph.D. in Chemical Engineering (catalysis-electrocatalysis), University of Patras.
  Title: "Heterogeneous Catalytic Phenomena in Trickle Bed Reactors and in High Temperature Solid Oxide Fuel cells", under the supervising of Prof. C.G. Vayenas

ACADEMIC EXPERIENCE, TRAINING AND SCIENTIFIC CAREER:

- **1987-1988:** Postdoctoral Fellow, Dept of Chemical Engineering **Princeton University,** NJ, USA
- **1989-2019:** Department of Chemistry, **Cambridge University, UK:** Close collaboration with Professor R.M. Lambert (numerous research visits)
- **1988-2001:** Academic career in **University of Patras** and **ICE/HT-FORTH** as bellow**:**
  - 1988-1991: Postdoctoral Fellow, Dept Chemical Engineering, University of Patras, GR.
  - 1988-2001: Senior researcher and collaborating faculty member, ICE/HT-FORTH, Patras, Gr.
  - 1991-1994: Temporary Faculty Member, Dept. Chemical Engineering, Univ. of Patras, Gr.
  - 1994-2000: Lecturer, Dept. Chemical Engineering, University of Patras, GR.
  - 2000-2001: Assistant Professor, Dept. Chemical Engineering, University of Patras, GR.
- **2001-Today:** Academic career in **Technical University of Crete** as bellow:
  - 2001-2006: **Associate Professor** in Physical Chemistry, Department of Sciences, TUC, Greece.
  - 2001-Today: **Director** of the "Physical Chemistry and Chemical Processes" laboratory.
  - 2006-Today: **Full Professor of Physical Chemistry** (Heterogeneous Catalysis/ Electrocatalysis/ Surfaces and Interfaces), Department of Sciences (2006-2013), and School of Environmental Engineering (2013-today), Technical University of Crete, Greece.
  - 2007-2009: **Chairman**, Department of Sciences, Technical University of Crete, GR.
  - 2013-2017: **Member of the University Council,** Technical University of Crete, GR.
  - 2021-Today: **Vice-Dean**, School of Chemical & Environmental Engineering, TUC, GR.

RESEARCH ACTIVITIES:

Prof. Yentekakis research activities in these positions involve the scientific areas:

- ***Heterogeneous Catalysis*** and the role of surface and structural promoters. Synthesis and characterization of novel nano-structured catalyst formulations and composites with specific performance in environmental and energy applications.
- ***Physical Chemistry of Surfaces and Interfaces***. Surface characteristics and chemistry evaluation by means of advanced microscopic and spectroscopic techniques (e.g., SEM, TEM, DRIFTS, XPS, XRD, etc).
- ***Electrochemical Promotion of Catalysis (EPOC)***; Non-Faradaic Electrochemical Modification of Catalytic Activity (NEMCA).
- ***Environmental Catalysis and Pollution Control***: Catalytic Emissions Control of pollutants (CO, NOx, N_2O, HCs, VOCs) from automotive and stationary sources; Catalytic Converters; Environmental Engineering

- ***Electrocatalysis, Electrochemistry***, ***Fuel Cells Science and Technology***: Analysis and design of novel fuel cell and electrochemical reactors; Direct Biogas Fuel Cells; Fused metal anode-Direct carbon fuel cells; H_2S fuel cells; Chemical Cogeneration.
- ***Chemical kinetics and thermodynamics***: Reactor and Chemical Processes Engineering.
- ***Natural gas, biogas and CO_2 valorization, management and utilization***.
- ***Hydrogen Energy***: Hydrocarbons and biofuels reforming for H_2 and syngas production.

ADMINISTRATIVE EXPERIENCES AND COMMITTEES:

- **Vice-Dean, School of Chemical & Environmental Engineering,** Technical University of Crete (2020-today)
- **University Council Regular Member,** Technical University of Crete (2013-2017)
- **Chairman,** Dept of Sciences, Technical University of Crete (2006-2009)
- **Regular Member of the Senate,** Technical University of Crete (2002-2003, 2007-2009)
- **Alternate Member of the Senate,** Technical University of Crete (2003-2007)
- **Member of the Committee of Graduate Studies** of the department of Sciences and the department of Environmental Engineering, Technical University of Crete (2001-today).
- **Member of the Central University Committee** for Economic and Research Development of the Technical University of Crete (2005-2007).

EDITORSHIPS:

α/α	*Journal Title*	*Responsibilities*	*Publisher*
1	**Nanomaterials**	**Section Editor-in-Shief**	**MDPI**
2	**Frontiers in Environmental Chemistry**	**Specialty Chief-Editor**	**Frontiersin.org**
3	**Frontiers in Environmental Science**	**Associate Editor** (up to 2017-19)	**Frontiersin.org**
4	**Catalysts**	**Section Editor** (Environmental Catalysis)	**MDPI**
5	**Molecules**	**Section Editor** (Physical Chemistry)	**MDPI**
6	**Reactions**	**Editorial Board**	**MDPI**
7	**Coatings**	**Editorial Board**	**MDPI**
8	**Catalysis Research**	**Editorial Board**	**LiDSEN**
9	**The Open Fuels & Energy Science Journal (Discontinued-2018)**	**Editorial Board**	**Bentham Open**
10	**The Open Conference Proceedings Journal (Discontinued-2020)**	**Editorial Board**	**Bentham Open**

GUEST EDITOR of journal SPECIAL ISSUES:

α/α	*Journal*	*Role*	*Special Issue Title*
1	**Frontiers in Environmental Science**	**Guest Editor**	**Advanced Utilization and Management of Biogas**
2	**Catalysts**	**Guest Editor**	**Emissions Control Catalysis**
3	**Catalysts**	**Guest Editor**	**Noble Metal Catalysts**
4	**Nanomaterials**	**Guest Editor**	**Advances in Heterocatalysis by Nanomaterials**
5	**Catalysts**	**Guest Editor**	**Nanomaterials in Catalysis Applications**
6	**Nanomaterials**	**Guest Editor**	**10th Anniversary of Nanomaterials: Recent Advances in Environmental nanoscience and Nanotechnology**
7	**Nanomaterials**	**Guest Editor**	**Nanocatalysis for Environmental Protection, Energy, and Green Chemistry**

TEACHING EXPERIENCE:

Extensive experience of lecturing and examining in physical chemistry, environmental and chemical engineering: Teaching of more than 110 semester courses at every level with the following courses' titles:

(i) Undergraduate

-Heterogeneous Catalysis
-Heterogeneous Reactor Engineering
-Chemical Kinetics and Reactor Engineering
-Introduction to Chemical Engineering
-Unit Operations & Heat Transfer
-Chemical and Energy Technologies
-Air pollution control
-Physical Chemistry
-Thermodynamics
- Energy and Fuels
- Gas Emissions Control Technologies
- Introduction to Chemical & Environmental Engineering

(ii) Postgraduate

- Special Aspects in Catalysis.
- Analysis and Design of Heterogeneous Reactors.
- Air Pollution Control.
- Physical and chemical operations-Analysis and Design.
- Modern aspects in chemical and energy technologies.
- Surface Science and Heterogeneous Catalysis.
- Mathematical modeling and Design of Physical and Chemical Operations.
- Advanced catalytic and electrocatalytic energy processes.
- Catalytic, electrocatalytic and electrochemical promotion.
- Biorefineries- valorization of wastes.
- Energy production Technologies
- Catalysis (specific topics)
- Supervision of numerous PhD (9) and MSc (>30) and Diploma work (>70) Theses.

AWARDS & HONORS:

- Crete Orthodox Academy Award	1978
- Athens Academy Award in the field of Chemistry	1992
- Hellenic Refinery of Aspropyrgos Fellowship	1984-1989
- ICE/HT-FORTH, Fellowship	1985-1987
- Chairman of international or national conferences' sessions:	>20

MEMBER OF CONFERENCES' ORGANIZER and/or SCIENTIFIC COMMITTEES:

- 3rd Panhellenic Catalysis Symposium, Patras, GR., 1993
- 1st Panhellenic Symposium of Chemical Engineering, Patras, GR., 1997
- 2nd Panhellenic Symposium of Chemical Engineering, Thessaloniki, GR., 1999
- 9th EuroConference on Solid State Ionics-Transport Properties, Patras, GR., 2004
- 3rd Panhellenic Symposium of Chemical Engineering, Athens, GR., 2001.
- 55th Annual Meeting of the Inter. Society of Electrochemistry, Thessaloniki, GR., 2004
- 5th Panhellenic Symposium of Chemical Engineering, Thessaloniki, GR., 2005
- 2nd National Conference of Hydrogen Technologies, Thessaloniki, 2005
- 8th Panhellenic Catalysis Congress, Cyprus, GR., 2006
- 10th Panhellenic Catalysis Congress, Metsovo, GR., 2008

- 11th Panhellenic Catalysis Congress, Athens, GR., 2010
- International Conference of Hydrogen Production (ICHP-11), Thessaloniki, 2011
-12th Panhellenic Catalysis Congress, Crete, GR., 2012 (Symposium President and Organizer).
-13th Panhellenic Catalysis Congress, Paleos Agios Athanasios Pellas, GR, 2014
-14th Panhellenic Catalysis Symposium, Patras, GR., 2016
-11th Panhellenic Symposium of Chemical Engineering, Thessaloniki, GR, 2017
- 6th International Conference on Environmental Chemistry & Engineering, July 24-25, 2017, Rome, Italy.
- International Conference on Renewable & Non Renewable energy Sources, November 9-11, 2017, Valencia, Spain.
- 15th Panhellenic Catalysis Symposium, Ioannina, GR, 2018
-13th Panhellenic Scientific Congrese of Chemical Engineering, Patras, GR, 2022
-16th Panhellenic Catalysis Symposium (President of the Symposium), Oct. 20-22, 2022, Chania, Crete, GR

REVIEWER OF SCIENTIFIC/RESEARCH ARTICLES:

More than 350 reviews in more than 60 international journal's titles, e.g., *Appl. Catal. B; Appl. Catal. A; J. Catal.; Int. J. Hydrogen Energy; I&ECR; Catal. Today; J. Power Sources; ACS Catal.; Environ. Scie. Techn.; Electrochim. Acta; Renewable Energy; ACS Sust. Chem. & Engin.; Energ. Conv. Manag.; Fuel; Renew. Sust. Energy Rev.; Rev. Chem. Eng.; Appl. Energy; Chem. Eng. J.; Appl. Surf. Sci.; J Electroch Soc.; J Alloys Comp.; Nanomaterials; Catalysts; Energy & Fuels; Sustain. Ener. Fuels: Materials; Mat. Sci. Eng. B; J. Haz. Mater.; The Canad. J. Chem. Eng.; Appl. Sciences; Catal. Comm.; J. Phys. Chem. C;* etc.

COLLABORATIONS:

Professor R.M. Lambert	Faculty of Chemistry, Cambridge University, UK
Professor and Dean M. Amiridis	Chancellor, University of Illinois at Chicago, USA.
Prof. K. Polychronopoulou	Faculty of Engineering, Khalifa University of Science & Technology, UAE.
Prof. G. Kyriakou	Faculty of Chemical Engineering, University of Patras, GR.
Associate Prof. P. Leone	Faculty of Engineering, Politecnico di Torino, Italy
Professor X.E. Verykios	Faculty of Chemical Engineering, University of Patras, GR.
Professor C.G. Vayenas	Athens National Academy of Science and Faculty of Chemical Engineering, University of Patras, GR.
Professor D. Kondarides	Faculty of Chemical Engineering, University of Patras, GR.
Professor D. Mantzavinos	Faculty of Chemical Engineering, University of Patras, GR.
Professor S. Bebelis	Faculty of Chemical Engineering, University of Patras, GR.
Professor D. Gournis	Faculty of Material Science Engineering, University of Ioannina, GR.
Professor M. Karakassides	Faculty of Material Science Engineering, University of Ioannina, GR.
Dr. T. Ioannides	Research Director A' of ICE/HT-FORTH, Patras, GR
Dr. S. Neophytides	Research Director A' of ICE/HT-FORTH, Patras, GR
Professor M.A. Goula	Faculty of Chemical Engineering, University of Western Macedonia, GR.
Professor N. Kalogerakis	Faculty of Environmental Engineering, Technical University of Crete, GR.
Professor E. Diamadopoulos	Faculty of Environmental Engineering, Technical University of Crete, GR.
Professor M. Stoukides	Faculty of Chemical Engineering, Aristotle Univ of Thessaloniki, GR
Professor N. Kallithrakas-Kontos	Faculty of Sciences, Technical University of Crete, GR
Assistant Prof. P. Panagiotopoulou	Faculty of Environmental Engineering, Technical University of Crete, GR
Professor Binlin Dou	University of Shanghai for Science and Technology, China
Professor Wei Chu	Faculty of Chemical Engineering, Sinchuan University, China
Dr. Philippe Vernoux	Institut de Recherches sur la Catalyse et l'Environnement de Lyon, France

PUBLISHED WORK:

a1) Research papers (publications) in international peer-reviewed journals: 127 (mean IF: >7.159)

a2) Research papers (publications) in national technical journals: 2

b) Patents: 3

c) Invited monograph (review paper of our work) in Scientific Journals: 1

d) Refereed publications in conference proceedings: 150

e) Invited Chapters in Handbooks published by Elsevier, Wiley-VCH and CRC publishers: 5

f) Technical reports (e.g., Reports to EU): > 300

g) Conference presentations: 151

h) Invited lectures in international conferences and academic or industrial institutions: >50

- **CITATION INDEX: >5270** citations (Google Scholar)
- **H-index: 44**
- **Scientific articles written by others exclusively about our research:**
  1. "Applied highlights: A selection of recent topics from the Chemical literature: Fuel cells for cogenerating electricity and SO_2", N.P. Freestone, *Chemistry and Industry, 17, September 4, 571-572 (1989).*
  2. "A New Process for Direct Coal Gasification", *Platinum Metals Review, 34(1), 35 (1990).*
  3. "Chemical Engineers near 'holy grail'", *Chemistry and Industry, 12, p444 (1994).*
  4. "One-step Process converts methane to ethylene in 85% yield", *Chem. & Eng. News, June 13 (1994) p41.*
  5. "Recycling reactions", P. Szuromi, *Science, 264, 1513 (1994)*

Summary of peer-reviewed Journal Publications

Jurnal Title	*Number of Publications*	*Journal Impact Factor (IF)*
Science	1	**63.714**
Applied Catalysis B: Environmental	19	**24.319**
Chemical Engineering Journal	1	**16.774**
Journal of Hazardous Materials	1	**14.224**
Journal of Power Sources	1	**9.794**
J CO2 Utilization	1	**8.321**
Journal of Catalysis	14	**8.047**
Journal of Environmental Chemical Engineering	3	**7.968**
Electrochimica Acta	1	**7.336**
International Journal of Hydrogen Energy	5	**7.139**
Catalysis Today	3	**6.562**
Applied Catalysis A: General	1	**5.723**
Nanomaterials	5	**5.719**
Frontiers in Environmental Science	3	**5.411**
Molecular Catalysis	1	**5.089**
Catalysts	5	**4.501**
Platinum Metals Review (now as: Johnson Matthey Technology Review)	1	**4.400**
Journal of the Electrochemical Society	1	**4.386**
Industrial & Engineering Chemistry Research	2	**4.326**
ACS Omega	1	**4.132**
Physical Chemistry Chemical Physics	1	**3.945**
Materials	1	**3.748**
Solid State Ionics	6	**3.699**

Journal of Physical Chemistry B	1	**3.466**
Applied Physics A	1	**2.983**
Ionics	8	**2.961**
Journal of Physical Chemistry A	1	**2.944**
Catalysis Letters	2	**2.936**
Topics in Catalysis	8	**2.781**
Chemical Engineering & Technology	1	**2.215**
Materials Today: Proccedings	1	**1.800**
Nonlinear Analysis: Theory, Methods & Appl.	1	**1.743**
Studies in Surface Science and Catalysis	7	**1.600**
Kinetics and Catalysis	1	**1.199**
Global NEST Journal	1	**1.134**
Perovskites and Related Mixed Oxides: Concepts & Applications (Book)	1	-
Handbook of Heterogeneous Catalysis (Book)	1	-
ACS division of Petroleum Chem. Inc Prepr.	2	**0.677(2000)**
		SCOPUS ↑
ACS series	1	**0.677(JCR-2000)**
Materials Science Forum	1	**0.461(JCR-2002)**
ISSI Letters	1	**0.625 (2000)**
Frontiers in Environmental Chemistry	1	-
Chemistry Proceedings	2	-
Advanced Materials Letters	1	-
The Electrochemical Society Ink.	5	-
Lecture Series in Computers & Computational Sciences	1	-
CRC Handbook	1	-
Summaries and Mean IF	**132 (Scopus:119)**	**980.421/111 = 8.832**

➢ **BOOKS AND CHAPTERS IN BOOKS: 15**

1. **"Unit Operations"**, I.V. Yentekakis, *(in Greek), Patras University Press, 1995.*
2. **"Physical Separation Processes: Analysis and Design"**, I.V. Yentekakis, *(in Greek), Kleidarithmos Publ., Athens, 2010.*
3. **"Current methods for energy conversion and utilization. Fuel Cells"**, I.V. Yentekakis, Patras University Press, (in Greek), 1998.
4. **"Atmospheric Pollution and Control"**, I.V. Yentekakis, (in Greek), *A. Tsiolas publ., Thessaloniki, 1999.*
5. **"Atmospheric Pollution: effects, control and advanced alternative clean technologies"**, I.V. Yentekakis, (in Greek), *Kleidarithmos Publ. Athens, 2010.*
6. **"Physical Chemistry"**, I.V. Yentekakis, (in Greek), *Technical University of Crete Press, 2001.*
7. **"Thermodynamics",** I.V. Yentekakis, *(in Greek), Technical University of Crete Press, 2002.*
8. **"Environmentally friendly technologies for natural gas valorization and use"**, I.V. Yentekakis, (in Greek), *Technical University of Crete Press, 2000.*
9. **"Analysis and Design of Chemical Reactors: Trickle-bed and Fluidized-bed Reactors"**, I.V. Yentekakis, (in Greek), *University of Patras, 1998.*
8. **"Non-Faradaic Electrochemical Modification of Catalytic Activity A Status Report"**.

   C.G. Vayenas, S. Bebelis, I.V. Yentekakis and H.-G. Lintz, **MONOGRAPH**, *Catal. Today, **11**, 303-445 (1992)*

9. **"Electrocatalysis and Electrochemical Reactors",** C.G. Vayenas, S. Bebelis, I.V. Yentekakis and S. Neophytides, *The CRC Handbook of Solid State Electrochemistry, Chapter 13, 445-480 (1997)*

10. **"Electrochemical Modification of Catalytic Activity"**, C.G. Vayenas and I.V. Yentekakis, *Wiley-VCH Handbook of Heterogeneous Catalysis, Eds. G. Ertl, H. Knozinger and J. Weitkamp, Weinheim/New York, Vol. 3, 1310-1325 (1997).*

11. **"Three-Way Catalysis"**, I.V. Yentekakis and M. Konsolakis, in Perovskites and Related Mixed Oxides: Concepts and Applications (P. Granger, V.I. Parvulescu, S. Kaliaguine and W. Prellier Eds.), 1st Ed., Wiley-VCH Vergal GmbH & Co. KGaA, Vol. 2, pp. 559-585 (2016).

12. **"Advances in Heterocatalysis by Nanomaterials"**, Edited by **Ioannis V. Yentekakis** and Wei Chu, Printed Edition of the Special Issue Published in Nanomaterials, MDPI, https://www.mdpi.com/journal/nanomaterials/special_issues/nano_heterocatalysis.

13. **"Emissions Control Catalysis"**, Edited by **Ioannis V. Yentekakis** and Philippe Vernoux, Printed Edition of the Special Issue Published in Catalysts, MDPI,

    https://www.mdpi.com/journal/catalysts/special_issues/emissions_catalysis.

14. **"EPOC with alkaline conductors-implementations in emissions control catalysis"**, I.V. Yentekakis, P. Vernoux, A. Caravaca, in "Electrochemical Promotion of Catalysis" (C.G. Vayenas and P. Vernoux Eds.), Springer-Nature, in press.

15. **"The effective-double-layer as an efficient tool for the design of sinter-resistant catalysts"**, I.V. Yentekakis, in "Electrochemical Promotion of Catalysis" (C.G. Vayenas and P. Vernoux Eds.), Springer-Nature, in press

PhDs, Masters and Diploma Supervising:

- **Supervisor of PhDs: 8**

  -Dr. M. Konsolakis

  -Dr. G. Goula

  -Dr. T. Papadam

  -Dr. V. Matsuka

  -Mrs. G. Botzolaki

  -Mr G. Artemakis

  -Ms A. Rontogianni

  -Ms E. Nikolaraki

- **Supervisor of MSc.: 30**
- **Supervisor of Engineering Diploma Works: >70**

Funded RESEARCH PROJECTS: 36 (in 21 as Scientific Co-ordinator)

- 1983-86, "Cogeneration of Electric Energy and Useful Chemicals in Fuel Cells", Funded by VW Stiftung, F.R. of Germany, (DM 90,000). Participation as Senior Researcher.
- 1987-90, "Multichannel fuel cell reactors ", Funded by EU, Non-nuclear Energy Program, EN3E/167/E, (100,000 €). Participation as Senior Researcher.

- 1988-92, "Fabrication and Evaluation of Small SOFC Reactors ", Funded by EU, Non-nuclear Energy Program, EN3E/D2/407/UK, (ECU 115,000). Participation as Senior Researcher.
- 1988-91, "Cogeneration of Electricity and Chemicals in Solid Electrolyte Cells with Catalytic Electrodes", Funded by VW Stiftung, F.R. of Germany, (DM 65,000). Participation as Senior Researcher.
- 1990-93, "Fundamental Studies of NonFaradaic Catalysis", Funded by EU, JOULE Programme, (100,000 €). Participation as senior Researcher.
- 1990-93, "Operational Tests of SOFC Modules and Use of SOFC as Chemical Reactors", Funded by EU, JOULE Programme, (65,000 €). Participation as Senior Researcher.
- 1991-94, "Use of SOFC as Chemical Reactor: Non-Faradaic Electrochemical Modification of Catalytic Activity and Selectivity of Partial Oxidation and CO Hydrogenation Catalysts", Funded by EU, JOULE Programme, (300,000 €). Participation as Senior Researcher.
- 1992-95, "Development of improved catalytic converters", Funded by EU, STRIDE Programme, (385,000 €). Participation as Senior Researcher.
- 1992-95, "New SOFC Materials and Technology", Funded by EU, CEC JOULE Programme, (98,000 €). Participation as Senior Researcher.
- 1992-93, "Operational Tests of SOFC and use of SOFC as Chemical Reactor", Funded by EU, CEC JOULE Programme, (50,000 €). Participation as Senior Researcher.
- 1993-96, "Fundamental Studies in Non-Faradaic Catalysis", Funded by British Council (Hellenic-British collaboration), (16,000 €). Participation as Senior Researcher.
- 1998-2001, "Promotion of environmentally important catalytic reactions" Funded by ICE/HT-FORTH, Internal ICE/HT-FORTH programme (9,000 €). **Coordinator.**
- 1999-2001, "Promotion by alkalies in emission control catalysis", Funded by GSRT and British Council, Athens (Greece-British Joint Research and Technology Programmes), (18,000 €). **Coordinator.**
- 2003-2007, "Kinetics, electrokinetics behavior and electrodic phenomena in novel fuel cells for environmentally important reactions", Funded by GSRT and EU, Program HERAKLEITOS, (65,000 €). **Coordinator.**
- 2005-2008, "A Novel process for direct production of electrical energy and hydrogen from urban and industry wastewater treatment", Funded by GSRT and EU, Program PENED, (114,000 €). **Coordinator.**
- 2005-2008, "Development of novel very effective and selective automotive catalytic converters", Funded by GSRT and EU, Program PENED, (114,000 €). **Coordinator.**
- 2006-2008, "Development of novel bi-metallic anodic materials for hydrocarbons' solid oxide fuel cells", Funded by GSRT and EU, Program Non-EU-242, (65,000 €). **Coordinator.**
- 2007-2008, "Hydrogen production from catalytic treatment of hydrocarbons and biofuels", Funded by Technical University of Crete, (5,000 €). **Coordinator.**
- 2008-2009, "Novel fuel cells for the production of electrical energy from biogas, biofuels and hydrocarbons", Funded by Technical University of Crete, (10,000 €). **Coordinator.**
- 2011-2014, "Advanced technology fuel cells for direct energy production from biogas and biomass derived fuels", Funded by GSRT and EU, Program HERAKLEITOS II, (45,000 €). **Coordinator.**
- 2011-2015, "Development of novel doubly promoted (surface and structural) catalytic systems for the simultaneous emissions' abatement of NOx and N_2O", Funded by GSRT and EU, Program THALIS, (600,000 €). **Coordinator for TUC.**
- 2012-2014, "Power valorization and treatment of enological wastewater", Funded by GSRT and EU, Program ESPA, (140,000 €). **Coordinator for TUC.**
- 2016-2017, "Environmental management of CO_2: its conversion to added-value chemicals", Funded by Special Research Funds Account, Technical University of Crete, (12,000 €). **Coordinator.**

- 2018 – 2021, Project title: *"A novel process for the efficient and eco-friendly valorization of biogas and CO_2 emissions: Complete conversion to ethylene (Eco-Ethylene)"*, **Funded by:** Ministry of Education, General Secretariat of Research and Technology, **TUC's Budget:** 275.000€ (total 1.000.000€). **Lead (coordinator) Partner**.
- 2019-2022, Project title: *"Development of new Catalysts for Efficient De-NO_x Abatement of Automobile Exhaust Purification (Acronym: CatEfDeNO$_x$)*, **Funded by:** General Secretariat of Research and Technology (GSRT), **TUC's Budget:** 160.000€ (total 424.520€). **Coordinator.**
- 2021–2023, Project title: *"Development and pilot scale demonstration of an innovative, effective and eco-friendly process for the production of clean hydrogen and electrical power generation from biogas (Eco-Bio-H2-FCs)"*, **Funded by:** Ministry of Education, General Secretariat of Research and Technology, **TUC's Budget:** 193.000€ (total 1.000.000€). **Lead (coordinator) Partner.**

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P1. European Patent EP 0480116 B1 "Metal-Solid Electrolyte Catalysts", C.G. Vayenas, S. Bebelis, I. V. Yentekakis and P. Tsiakaras (1996/30). **(Bayed by BASF)**

P2. P C T Patent Application, No: GR-0001-94, Jan28, 1994 "Method and Apparatus for forming Ethylene or Ethane and Ethylene from Methane", C.G. Vayenas, I.V. Yentekakis and Jiang Yi (1994).

P3. European Patent EP 0665047 B1 "New three-way catalysts with Pt, Rh and Pd, each supported on a separate support" X. Verykios, C.G. Vayenas, I.V. Yentekakis, E. Papadakis and C. Pliangos (1998/35).

I.V. Yentekakis LIST OF PUBLICATIONS

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J2) C.G. Vayenas, P.G. Debenedetti, **I.V. Yentekakis**, L.L. Hegedus. Cross-Flow, Solid State Electrochemical Reactors: A Steady-State Analysis. *Industrial & Engineering Chemistry: Fundamentals 24 (1985) 316-324*

J3) **I.V. Yentekakis**, C.G. Vayenas. Effectiveness Factors for Reactions Between Volatile and Non-volatile Components in Partially Wetted Catalysts. *Chemical Engineering Science 42 (1987) 1323- 1332*

J4) **I.V. Yentekakis**, S. Neophytides, C.G. Vayenas. Solid Electrolyte Aided Study of the Mechanism of CO Oxidation on Polycrystalline Platinum. *Journal of Catalysis 111 (1988) 152-170*

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C112) "Ionically conducting materials as effective catalyst supports with potential implementations on catalytic systems that play a critical role in environmental protection" **Invited Plenary lecture**.
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C114) "Effect of oxygen lability of the support on the catalytic activity and selectivity of supported Rh catalysts under the CO_2 hydrogenation reaction towards CH_4 production"
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15th Panhellenic Catalysis Symposium, Ioannina, Greece, Book of Abstracts, pp. 117, 2018.

C115) "Investigating the deactivation due to carbon deposition of CeO_2 or La_2O_3 modified Ni/ZrO_2 catalysts during the dry reforming of biogas"
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C118) "Effect of lattice oxygen ion lability of the support on the oxidative state and catalytic performance of Rh nanoparticles under dry reforming of biogas reaction"
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