

<b>PERSONAL DETAILS</b>	
Name and Surname	DIONYSIOS KAROUSOS
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<b>EDUCATION</b>	
Master Diploma: Chemical Engineering	National Technical University of Athens
	Graduation date: 3/12/2002, Degree: 8.18
Master Diploma: Material science and technology	Interdisciplinary Interdepartmental Postgraduate Program “Materials Science and Technology”
	School of Chemical Engineering of NTUA
	Graduation date: 13/10/2004, Degree: 8.26
PhD Diploma: Chemical Engineering	Thesis title: “Photoelectrochemistry of Cd(Zn)Se electrodeposits. Preparation and characterization of TiO <sub>2</sub> /CdSe photoelectrodes.”
	School of Chemical Engineering of NTUA
	Graduation date: 30/5/2012
<b>PUBLICATIONS IN PEER-REVIEWED JOURNALS</b>	
1	M. Bouroushian, T. Kosanovic, D. Karoussos, N. Spyrellis: Electrodeposition of polycrystalline ZnTe in aqueous medium using constant and pulsed potentials, <i>Electrochim. Acta</i> 54 (2008) 2522.
2	T. Kosanovic, D. Karoussos, M. Bouroushian: CdSe electrodeposition on anodic, barrier or porous Ti oxides. A sensitization effect, <i>J. of Solid State Electrochem.</i> 14 (2010) 241.
3	Dionysios S. Karousos, Andreas A. Sapalidis, Evangelos P. Kouvelos, George Em. Romanos & Nickolaos K. Kanellopoulos (2016) A study on natural clinoptilolite for CO <sub>2</sub> /N <sub>2</sub> gas separation, <i>Separation Science and Technology</i> , 51:1, 83-95, DOI: 10.1080/01496395.2015.1085880.
4	Dionysios S. Karousos, Kostantinos I. Desdenakis, Petros M. Sakkas, Georgia Sourkouni, Bruno G. Pollet, Christos Argirusis, Sonoelectrochemical one-pot synthesis of Pt - carbon black nanocomposite PEMFC electrocatalyst, <i>Ultrason. Sonochem.</i> 35, Pt B (2017) 591-597.
5	Dionysios S. Karousos, Evangelos Kouvelos, Andreas A. Sapalidis, Kaija Pohako-Esko, Matthias Bahlmann, Peter S. Schulz, Peter Wasserscheid, Eirini Siranidi, Olga Vangeli, Polycarpos Falaras, Nick K. Kanellopoulos, and George E. Romanos, Novel Inverse Supported Ionic Liquid Absorbents for Acidic Gas Removal from Flue Gas, <i>Ind. Eng. Chem. Res.</i> , 55 (19) (2016) 5748–5762.
6	D.S. Karousos, O.C. Vangeli, C. Athanasekou, A.A. Sapalidis, E.P. Kouvelos, G.Em. Romanos, N.K. Kanellopoulos, Physically bound and chemically grafted activated carbon supported 1-hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide and 1-ethyl-3-methylimidazolium acetate ionic liquid absorbents for SO <sub>2</sub> /CO <sub>2</sub> gas separation, <i>Chem. Eng. J.</i> 306 (2016) 146-154.
7	Dionysios Karousos, Anastasios I. Labropoulos, Andreas Sapalidis, Nick K. Kanellopoulos, Boyan Iliev, Thomas J.S. Schubert, George E. Romanos, Nanoporous ceramic supported ionic liquid membranes for CO <sub>2</sub> and SO <sub>2</sub> removal from flue gas, <i>Chemical Engineering Journal</i> , 313 (2017) 777–790.
8	D.S. Karousos, A.I. Labropoulos, O. Tzialla, K. Papadokostaki, M. Gjoka, K.L. Stefanopoulos, K.G. Beltsios, B. Iliev, T.J.S. Schubert, G.E. Romanos, Effect of a cyclic heating process on the CO <sub>2</sub> /N <sub>2</sub> separation performance and structure of a ceramic nanoporous membrane supporting the ionic liquid 1-methyl-3-octylimidazolium tricyanomethanide, <i>Separation and</i>

	Purification Technology, 200 (2018) 11-22.
9	D.S. Karousos, A.I. Labropoulos, O. Tziaila, K. Papadokostaki, M. Gjoka, K.L. Stefanopoulos, K.G. Beltsios, B. Iliev, T.J.S. Schubert, G.E. Romanos, Effect of a cyclic heating process on the CO <sub>2</sub> /N <sub>2</sub> separation performance and structure of a ceramic nanoporous membrane supporting the ionic liquid 1-methyl-3-octylimidazolium tricyanomethanide, Separation and Purification Technology, 200 (2018) 11-22.
10	Evangelos P. Favvas, Nikolaos S. Heliopoulos, Dionysios S. Karousos, Eamonn Devlin, Sergios K. Papageorgiou, Dimitrios Petridis, Georgios N. Karanikolos, Mixed matrix polymeric and carbon hollow fiber membranes with magnetic iron-based nanoparticles and their application in gas mixture separation, Materials Chemistry and Physics 223 (2019) 220–229.
11	Dionysios S. Karousos, Linfeng Lei, Arne Lindbråthen, Andreas A. Sapolidis, Evangelos P. Kouvelos, Xuezhong He, Evangelos Favvas, Cellulose-based carbon hollow fiber membranes for high-pressure mixed gas separation of CO <sub>2</sub> /CH <sub>4</sub> and CO <sub>2</sub> /N <sub>2</sub> , Separ. Purif. Technol. 253 (2020) 117473.
12	T. Esser, T. Wolf, T. Schubert, J. Benra, S. Forero, G. Maistros, S. Barbe, G.V. Theodorakopoulos, D.S. Karousos, A.A. Sapolidis and E.P. Favvas, CNTs based cellulose acetate membranes: an optimization study of the filler materials dispersion method and its investigation by using impedance spectroscopy, Nanomaterials, 11(2), 280 (2021) 1-21.
13	E.G. Deze, M.D. Bareka, D.S. Karousos, A.A. Sapolidis, E.P. Favvas, Mesoporous silica based copper catalytic materials for potential deNO <sub>x</sub> application: synthesis and characterization, Materials Today: Proceedings, 2021, <a href="https://doi.org/10.1016/j.matpr.2021.02.548">https://doi.org/10.1016/j.matpr.2021.02.548</a> .
<b>CONFERENCE PRESENTATIONS</b>	
1	D. Karoussos, T. Kosanovic, M. Bouroushian, Z. Loizos & N. Spyrellis: "Photoaction spectra of cathodically electro-deposited cadmium and zinc chalcogenides employing various red-ox solutions", Proc. 55th Annual Meeting of the International Society of Electrochemistry, Thessaloniki, Greece (September 19-24 2004) 525.
2	D. Karoussos, T. Kosanovic, M. Bouroushian & N. Spyrellis: "Electrodeposition and properties of Zn <sub>x</sub> Cd <sub>1-x</sub> Se thin films", East-forum 2005 / EUROINTERFINISH 2005, Barcelona, Spain (May 12-13 2005), 44.
3	D. Karousos, M. Bouroushian: "Photovoltaic properties of CdSe//Fe <sup>2+</sup> /Fe <sup>3+</sup> and CdSe//S-2/Sx-2 diodes", 5th Panhellenic Scientific Conference of Chemical Engineering, Thessaloniki (26-29 May 2005) Book of abstracts, p.1021.
4	D. Karoussos, T. Kosanovic, M. Bouroushian: "Optical properties of electrodeposited ZnSe/CdSe/Ni and Zn <sub>x</sub> Cd <sub>1-x</sub> Se/Ti films", Proc. SSI-15 International Conference on Solid State Ionics, Baden-Baden, Germany (July 17-22 2005), 292.
5	D. Karoussos, T. Kosanovic and M. Bouroushian: "Optical and electrical properties of electrodeposited CdSe thin films as a function of microstructure", EDNANO-4 4th International Workshop on Electrodeposited Nanostructures (March 16-18 2006, Dresden, Germany), book of abstracts.
6	D. Karoussos, T. Kosanovic, M. Bouroushian, N. Spyrellis: "The crystallite size effect in electrodeposited CdSe thin films" ("Microstructural relations in the CdSe/TiO <sub>x</sub> system"). East-forum 2006 - Control of deposits processes, (Schwaebisch Gmuend - Germany, June 1 - 2 2006).
7	D. Karoussos, M. Bouroushian and T. Kosanovic: "Binary ZnSe/CdSe and ZnTe/CdSe polycrystalline films as electrodes in photoelectrochemistry", 16th International Conference on Photochemical Conversion and Storage of Solar Energy, Uppsala, Sweden (July 2-7 2006) Book of Abstracts, W7-P-9.
8	D. Karoussos, T. Kosanovic, D. Vasilakopoulos and M. Bouroushian: "A study on Cd and Zn selenides electrodeposited on variously treated Ti substrates", 16th International Conference on Photochemical Conversion and Storage of Solar Energy, Uppsala, Sweden (July 2-7 2006) Book of Abstracts, W7-P-10.

9	D. Karoussos, M. Bouroushian: "On the ferro-ferricyanide photocorrosion effect on CdSe(ZnSe) electrodes", Inorganic Reaction Mechanisms Subject Group (IRMG) - 36th IRMG Meeting, York, United Kingdom (March 18-20 2007) Book of Abstracts, P24.
10	D. Karousos, M. Bouroushian: "Application of the electrochemical impedance spectroscopy method for the stability study of Ni/CdSe /ZnSe/SPS photoelectrochemical elements. 6th Panhellenic Scientific Conference on Chemical Engineering, Athens (May 31, 2007) Book of abstracts, pp. 53-56.
11	T. Kosanovic, D. Karoussos, M. Bouroushian: "Electrodeposition of zinc telluride". 17th International Symposium on the Photochemistry and Photophysics of Coordination Compounds, Trinity College, Dublin, Ireland (June 24-28 2007) Book of Abstracts, p.123, P9.
12	D. Karoussos, T. Kosanovic, D. Vasilakopoulos, M. Bouroushian: "Hexacyanoferrates and II-VI Compound photoelectrochemistry". 17th International Symposium on the Photochemistry and Photophysics of Coordination Compounds, Trinity College, Dublin, Ireland (June 24-28 2007) Book of Abstracts, p.124, P10.
13	T. Kosanovic, D. Karoussos, M. Bouroushian, N. Spyrellis : "Nanotechnology and innovative coatings", Eurointerfinish, Athens, Greece (October 18-19 2007) Book of Abstracts, O26.
14	M. Bouroushian, D. Karoussos, T. Kosanovic: "Sensitization of porous titania electrodes by CdSe electrodeposition". 5th Kurt Schwabe Symposium, Erlangen, Germany (May 24-28 2009).
15	R. Koutsikou, E. Thoulitotis, D. Karousos, M. Bouroushian: "Photovoltammetric study of polycrystalline CdSe, CdTe and CuInSe <sub>2</sub> electrodes in aqueous and organic electrolytes - a photo corrosion study". 7th Panhellenic Scientific Conference of Chemical Engineering, Patras (June 3-5, 2009), Book of abstracts.
16	D. Karoussos, R. Koutsikou, M. Bouroushian: "Optical properties of templated CdSe electrodeposits on nanoporous TiO <sub>2</sub> ". Second Regional Symposium on Electrochemistry, Belgrade, Serbia (June 6-10 2010) Book of Abstracts, p 87.
17	D. Karoussos, M. Bouroushian, E. Thoulitotis: "Mott-Schottky analysis of CdSe – sensitized, porous TiO <sub>2</sub> electrodes". 9th European Symposium on Electrochemical Engineering (9th ESEE), Chania, Crete (June 19-23 2011) Book of Abstracts, p118.
18	R. Koutsikou, M. Arfanis, D. Karoussos, M. Bouroushian: "(Photo)voltammetry in Cu-In-Se precursor solutions and photoelectrochemical characterization of chalcopyrite CuInSe <sub>2</sub> films". 7th International Conference on Instrumental Methods of Analysis (IMA 2011), "Modern Trends and Applications", Chania, Greece (September 18-22 2011) Book of Abstracts, PP216.
19	Th. Makri, D. Karousos, M. Bouroushian: "Electrochemical synthesis of CuxS with nanowire morphology", 9th Panhellenic Scientific Conference of Chemical Engineering, Athens (23-25 May 2013) Proceedings MP0148.
20	G.E. Romanos, A. Lambropoulos, A. Sapalidis, D. Karousos: "IONIC LIQUID MEMBRANES FOR GAS SEPARATION". 22 <sup>nd</sup> Panhellenic Chemistry Conference, Hellenic Chemists Association, Thessaloniki 2016 (Speech in Thematic "Physics and Chemistry theory").
21	O. Tzialla, D. Karousos, A. Lambropoulos, G. Karanikolos, G. Pilatos, K. Beltsios, G. Romanos: "Porous adsorbents and gas separation membranes with the involvement of precursor phases of ionic liquids", 12th Panhellenic Scientific Conference of Chemical Engineering, Athens (29-31 May 2019) Proceedings MN0407.
22	D.S. Karousos, A.A. Sapalidis, E.P. Kouvelos, E.P. Favvas, Nano-Scaled Activated Carbon as Potential Filler for CO <sub>2</sub> Selective Mixed Matrix Membranes, 6th International Conference from Nanoparticles and Nanomaterials to Nanodevices and Nanosystems (6th IC4N), Corfu (Kerkyra), Greece June 30 - July 3rd, 2019, Book of Abstracts, p.71.
23	D. Karousos, G. Maistros, G. Theodorakopoulos, S. Forero, A.A. Sapalidis, T. Schubert, E.P. Favvas, "Nanocarbon-based polyimide CO <sub>2</sub> Selective Hollow Fiber Membranes: a Dispersion Study of embedded filler materials by using impedance spectroscopy", 69th Canadian

	Chemical Engineering Conference (EECE), 20-23 October 2019, Halifax, Canada.
24	E.G. Deze, D.S. Karousos, A.A. Sapalidis, E.P. Favvas, "Mesoporous Silica based copper catalytic materials: Synthesis, Characterization & deNO <sub>x</sub> Evaluation", 17th International Conference on Nanosciences & Nanotechnologies (NN20), 7-10 July 2020, Thessaloniki, Greece
25	K. Mansouris, G. Theodorakopoulos, D. Karousos, A.A. Sapalidis, E. Efthimiadou, E.P. Favvas, "Ternary phase diagrams of polyimide/solvent/non-solvent systems", Athens Conference on Advances in Chemistry (ACAC2020), 10 -14 March, 2021, Athens, Greece.
26	G.V. Theodorakopoulos, D.S. Karousos, A.A. Sapalidis, S. Forero, T. Schubert, E.P. Favvas*, "Pebax/Polyimide dual-layer hollow fiber membranes for gas separation applications", Euromembrane 2021, 28 November – 02 December, Copenhagen, Denmark.

#### **PATENTS**

1	Dionysios Karousos, Andreas Sapalidis, Georgios Karanikolos, Evangelos Favvas, "Magnetic Swing Absorption", United State Patent and Trademark Office, USPTO, US 63/078,433 (Foreign Filing License Granted: 09/18/2020).
2	Dionysios Karousos, Andreas Sapalidis, Georgios Karanikolos, Evangelos Favvas, "Separation factor determination for gas sorption from binary gas mixtures", United State Patent and Trademark Office, USPTO, US 63/078,364 (Foreign Filing License Granted: 09/18/2020).

#### **WORK EXPERIENCE AS RESEARCH ASSOCIATE**

1	Scientific work, during the period 1/1/2006 - 31/12/2007, on basic research program: "Leucippus", "Thermodynamics and kinetics of charge transfer at semiconductor / electrolyte interfaces and microcrystalline semiconductor heterostructures. Study on single and double photoelectrode coatings of II-VI semiconductor compounds" at NTUA, School of Chemical Engineering.
2	Post-doctoral research with project agreements at NCSR DEMOKRITOS from 12/01/2013 to 09/19/2015. The work involved covering research needs for the research program / project "Capturing CO <sub>2</sub> using hybrid membrane process / sorbents" (project code: 12CHN248), as part of the nationwide action "Bilateral S & T Cooperation between Greece and China from 2012 to 2014".
3	Post-doctoral research with project agreements at NCSR DEMOKRITOS from 01/11/2016 to 31/10/2019: "Membrane- and Adsorption-based Gas Separation Under Magnetic Field", ADNOC R&D Oil and Gas Sub Committees, Emirate of Abu Dhabi (Call: Gas Processing & Sweetening R&D Projects).
4	Post-doctoral research with project agreements at NCSR DEMOKRITOS from 29/05/2018 to 28/05/2021: «CO <sub>2</sub> separations by using mixed matrix, based on nano-carbon materials, membranes» (GG-CO <sub>2</sub> ), Greek-German Bilateral Research and Innovation Cooperation.
5	Post-doctoral research with project agreements at NCSR DEMOKRITOS from 06/04/2020 to 05/07/2021: "Development of an innovative catalytic membrane with copper-palladium nanoparticles for the effective treatment of NO <sub>x</sub> pollutants", Action: Support for Researchers with an Emphasis on Young Researchers ("Human Resource Development, Education and Lifelong Learning". Integrated Information System Code: (MIS) 5047821).