

Dr. Michalis A. Vasiliades

mv.kykpee@gmail.com

11 Ipparchou Street, Strovolos
2029, Nicosia, Cyprus
CY mobile: (+357) 99431272
DOB: 25 February 1989

WORK EXPERIENCE

- Cyprus Centre for Environmental Research and Education, Cyprus** 2020 - current
- Research Lecturer
 - Research development in the fields of Environmental Citizenship, Environmental Education and Citizen Science
 - Writing of scientific publications
 - Writing of research proposals
 - Co-supervise research projects
- Department of Chemistry, University of Cyprus, Cyprus** 2017 - 2020
- Postdoctoral Research Fellow in Heterogeneous Catalysis Laboratory (Prof. Angelos M. Efstathiou)
 - Supervision of undergraduate and postgraduate (PhD) students
 - Building-up and hands-on maintenance of transient gas-flow panels and advanced equipment (MS, FTIR, UV-VIS, XRD, BET)
 - Planning and direction of chemical laboratory activity, including writing of research papers and proposals
 - Teaching Assistant in Chemical Technology and Analytical Chemistry
 - Reaction Engineering and application of PFR and CSTR
 - Reverse Osmosis (high-pressure systems)
- Sasol S.A. (Collaboration), South Africa** 2013 - 2020
- Project: Mechanistic studies of Fischer-Tropsch Synthesis reaction over industrial Co-based catalysts
- Investigate the role of chemical promoter on industrial Co-FTS catalysts
 - Development of novel steady-state isotopic transient kinetic analysis (SSITKA) by using stable isotopes ($^{13}\text{CO}_2$, $^{18}\text{O}_2$, ^{13}CO and D_2)
 - Application of Temperature-Programmed Oxidation or Hydrogenation (TPO or TPH) and Transient Isothermal Hydrogenation (TIH) techniques
 - Kinetic modelling and simulation of rival mechanisms based on transient experimental data
- National Institute of Chemistry (Collaboration), Slovenia** 2015 - 2017
- Project: Dry reforming of natural gas or biogas over Ce-Zr-based supported metals for hydrogen production
- Development of novel Ni and Ni-Co supported on Ce-Zr-based catalysts for natural gas exploitation
 - Use of in-situ diffuse reflectance infrared Fourier transform (DRIFTS) and MS for catalytic studies coupled with data analysis
 - Performance of physicochemical analysis of solids, such as: powder X-ray diffraction (XRD), UV-Vis spectrophotometry, High Resolution Transmission Electron Microscopy (HR-TEM), Secondary Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM)
- Luxfer MEL Chemicals (Collaboration), United Kingdom** 2014 - 2017
- Project: Characterization of commercial Ce-Zr-O-based mixed metal oxides (three-way catalysts application)
- Investigation of redox functionality of Ce-Zr-O-based materials depending on their structure
 - Introduction and development of effective techniques (H_2 -Transient Isothermal Reduction and Transient Isothermal Isotopic Exchange) for measuring redox functionality of Ce-Zr-O-based materials
 - Surface area and pore size distribution analysis (use of Brunauer–Emmett–Teller (BET) and Barrett-Joyner-Halenda (BJH) methods)
- Department of Mechanical Engineering (Collaboration), University of Cyprus, Cyprus** 2013 - 2017
- Project: Characterization of natural and/or waste materials using temperature-programmed techniques
- Multidisciplinary project between Mechanical, Chemical, Civil and Environmental Engineering
 - Upgrade natural and waste materials to be used for CO_2 uptake (sequestration) in building materials
- Chemical Process & Energy Resources Institute (CPERI) (Collaboration), Greece** 2013 - 2014
- Project: Characterization of supported Iridium catalysts for de- N_2O catalytic activity
- Department of Chemical and Biological Engineering, University of Sheffield, United Kingdom** 2012 - 2013
- Project: Investigation, by mathematical modelling prediction, of protein-protein interactions and docking (Proteomics / Interactomics)
- Development of new Protein Interaction Database, with neural network algorithms by using Mathematica language
- Department of Biological Sciences, University of Cyprus, Cyprus** 2011 - 2012
- Research in the Bioinformatics Research Laboratory (BRL, Prof. Vasilis Promponas)
- Implementation of Mitochondrial Genome Database using Perl and R language in Apache servers and GBrowse

[*Michael Vasiliades on LinkedIn*](#)

PUBLICATIONS

- [1] Chen S. et al., Applied Catalysis B: Environmental, in press (2020).
 - [2] Petalidou K.C. et al., Journal of Catalysis, in press (2020).
 - [3] Vasiliades M.A. et al., Catalysts 10 (2020) 583.
 - [4] AlKetbi M. et al., Applied Surface Science 505 (2020) 144474.
 - [5] Vasiliades M.A. et al., Journal of Catalysis 379 (2019) 60-77.
 - [6] Anastopoulos I. et al., Journal of Environmental Management 250 (2019) 109389.
 - [7] Vasiliades M.A. et al., Catalysis Today in Press (2020).
 - [8] Damaskinos C.M. et al., Catalysts 9 (2019) 621.
 - [9] Damaskinos C.M. et al., Applied Catalysis A: General 579 (2019) 116-129.
 - [10] Yan Q. et al., Applied Catalysis B: Environmental 255 (2019) 117749.
 - [11] Vasiliades M.A. et al., Topics in Catalysis 62 (2019) 219-226.
 - [12] Vasiliades M.A. et al., Catalysis Today 299 (2018) 201-211.
 - [13] Vasiliades M.A. et al., Catalysis Science & Technology 7 (2017) 5422-5434.
 - [14] Rigopoulos I. et al., Journal of CO₂ Utilization 16 (2016) 361-370.
 - [15] Vasiliades M.A. et al., Applied Catalysis B: Environmental 197 (2016) 168.
 - [16] Pachatouridou E. et al., Applied Catalysis B: Environmental 187 (2016) 259-268.
 - [17] Rigopoulos I. et al., Advanced Powder Technology 27 (2016) 360-371.
 - [18] Rigopoulos I. et al., Powder Technology 273 (2015) 220-229.
 - [19] Rigopoulos I. et al., Greenhouse Gas Sci Technol. 5 (2015) 1-14.
 - [20] Makri M.M. et al., Catalysis Today 259 (2015) 150-164.
 - [21] Rigopoulos I. et al., Cement and Concrete Composites, submitted (2020).
 - [22] Chen S. et al., Applied Catalysis B: Environmental, submitted (2020).
 - [23] Vasiliades M.A. et al., Applied Catalysis B: Environmental, submitted (2020).
 - [24] Almutawa A. et al., ACS Catalysis, submitted (2020).
 - [25] Wanlin G. et al., Nature Catalysis, to be submitted (2020).
-

CONFERENCES

- [1] **Vasiliades M.A.**, Efstathiou A.M. "Dynamic Experiments in Studying Redox Properties of CeO₂-based Materials", Catalysis Workshop, 22 – 23 November 2013, Clausthal, Germany.
- [2] **Vasiliades M.A.**, Efstathiou A.M. "Understanding the Effects of Support Chemical Composition on the Origin and Reactivity of Carbon Formed During Dry Reforming of CH₄ over Ni/Ce_{1-x}M_xO_{2-δ} (M=Zr⁴⁺, Pr³⁺) via Transient Isotopic Techniques", 11th Natural Gas Conversion Symposium, 5-9 June 2016, Tromsø, Norway.
- [3] **Vasiliades M.A.**, Efstathiou A.M. "Transient isotopic experiments in dry reforming of CH₄ over Ni/Ce_{1-x}M_xO_{2-δ} (M=Zr⁴⁺, Pr³⁺): The effect of support chemical composition on the origin and reactivity of carbon", 2nd Postgraduate Chemistry Conference, 27 – 29 June 2016, Agros, Cyprus.
- [4] Davlyatova L.F., **Vasiliades M.A.**, Efstathiou A.M. "Dynamic experiments in studying redox properties of CeO₂-based materials", 2nd Postgraduate Chemistry Conference, 27 – 29 June 2016, Agros, Cyprus.
- [5] **Vasiliades M.A.**, Efstathiou A.M. "Μελέτη της Αντίδρασης DRM σε Καταλύτες Ni/Ce_{1-x}M_xO_{2-δ} (M=Zr⁴⁺, Pr³⁺) με τη Χρήση Δυναμικών Ισοτοπικών Μεθόδων", 14^ο Πανελλήνιο Συμπόσιο Κατάλυσης, 13 – 15 Οκτωβρίου 2016, Πάτρα, Ελλάδα.
- [6] Davlyatova L.F., **Vasiliades M.A.**, Efstathiou A.M. "Transient Redox Kinetics of CeO₂-ZrO₂-based Commercial Materials", 14^ο Πανελλήνιο Συμπόσιο Κατάλυσης, 13 – 15 Οκτωβρίου 2016, Πάτρα, Ελλάδα.
- [7] **Vasiliades M.A.**, Djinnovic P., Davlyatova L.F., Pintar A., Efstathiou A.M. "Dry reforming of methane over Ce_{0.38}Zr_{0.62}O_{2-δ} supported Ni-Co catalysts: The origin and reactivity of carbon formed studied by transient techniques", 13th European Congress on Catalysis (EUROPACAT 2017), 27 – 31 August 2017, Florence, Italy.
- [8] **Vasiliades M.A.**, Efstathiou A.M. "The effect of Co particle size and time on stream on the deactivation of Co/γ-Al₂O₃ in CO hydrogenation studied by SSITKA and DRIFTS techniques", 13th European Congress on Catalysis (EUROPACAT 2017), 27 – 31 August 2017, Florence, Italy. – **Awarded by RSC as the best poster among 1000+ participants.**
- [9] **Vasiliades M.A.**, Efstathiou A.M. "Transient isotopic experiments in DRM over 5 wt.% Ni/Ce_{1-x}Pr_xO_{2-δ}: The effect of Ce/Pr composition on the carbon path and the participation of lattice oxygen", 3rd Fundamentals and Applications of Cerium Dioxide in Catalysis, 25 – 27 June 2018, Barcelona, Spain.
- [10] **Vasiliades M.A.**, Efstathiou A.M. "Transient Kinetic Analysis of methanation reaction using operando MS-DRIFTS methodology", 15th Panhellenic Symposium in Catalysis, 18 – 20 October 2018, Ioannina, Greece.
- [11] **Vasiliades M.A.**, Efstathiou A.M. "Operando SSITKA-MS-DRIFTS on Co-based industrial catalysts", 15th Panhellenic Symposium in Catalysis, 18 – 20 October 2018, Ioannina, Greece.
- [12] Damaskinos C.M., **Vasiliades M.A.**, Efstathiou A.M. "The effect of Pt on the Carbon Pathway in DRM over Ni-Pt/Ce_{0.8}Pr_{0.2}O_{2-δ}", 15th Panhellenic Symposium in Catalysis, 18 – 20 October 2018, Ioannina, Greece.
- [13] **Vasiliades M.A.**, Harris D., Stephenson H., Boghosian S., Efstathiou A.M. "A novel analysis of transient isothermal ¹⁸O isotopic exchange on commercial CexZr1-xO2-based OSC materials", CAPOC 11, 29 – 31 October 2018, Brussels, Belgium.
- [14] **Vasiliades M.A.**, Damaskinos C.M., Kyprianou K.K., Efstathiou A.M. "The effect of Pt and dopant M (Pr³⁺, Ti⁴⁺) in the Ce_{1-x}M_xO_{2-δ}-supported NiPt catalyst on the carbon pathways in the dry reforming of methane studied by transient and isotopic techniques", 14th European Congress on Catalysis (EUROPACAT 2019), 18 – 23 August 2019, Aachen, Germany. – **Awarded by DECHEMA as the best poster among 1000+ participants.**

[15] **Vasiliades M.A.**, Kalamaras C.M., Govender N.S., Govender A., Efstathiou A.M. "The effect of preparation route of commercial Co/ γ -Al₂O₃ Fischer-Tropsch catalyst on important kinetic parameters studied by SSITKA and other transient techniques", 14th European Congress on Catalysis (EUROPACAT 2019), 18 – 23 August 2019, Aachen, Germany.

EDUCATION

PhD Chemistry / Heterogeneous Catalysis

2013 – 2017 — University of Cyprus, Department of Chemistry

Grade: Distinction with Honor

MSc[Eng] Biological and Bioprocess Engineering / Bioinformatics in Bioenergy

2012 – 2013 — University of Sheffield, Department of Chemical and Biological Engineering

Grade: Merit

BSc Biological Sciences / Bioinformatics

2008 – 2012 — University of Cyprus, Department of Biological Sciences

Grade: 8/10

AWARDS AND SKILLS

- ✓ Nominee (from a list of > 15 people) for the Young Researcher Award 2019, Cyprus Research Promotion Foundation. **The work graded with > 90%**
- ✓ **Best Poster Award**, 13th and 14th European Congress on Catalysis (2017 and 2019)
- ✓ **First Place Award** (2017) as a PhD candidate, Faculty of Pure and Applied Sciences, University of Cyprus
- ✓ Proficient in laboratory practices and knowledge in management of laboratory equipment with further complicated data analysis
- ✓ Catalytic, mechanistic and reaction modelling and simulation
- ✓ Computational biology application in biochemical and bioprocess engineering
- ✓ Excellent managerial, organization and planning skills
- ✓ Special Forces Second Lieutenant
- ✓ Languages: Greek (Native language), English (Excellent)