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Google Scholar: <https://scholar.google.com/citations?user=OhklFngAAAAJ>  
h-index = 8 (2009-present)

## EDUCATION

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- Ph.D.** Chemical Engineering 2014 - 2018  
Texas A&M University, College Station, Texas, USA  
**Dissertation:** “Computational study of reactive and coke-resistant catalysts for the dry reforming reaction of methane”  
**Advisor:** Prof. Perla B. Balbuena
- B.Eng.** Chemical Engineering (1<sup>st</sup> Class Honours) 2010 - 2014  
Chulalongkorn University, Bangkok, Thailand  
**Senior Project:** “Effects of single and bisupport system of activated carbon on tungsten catalyst”  
**Advisor:** Prof. Bunjerd Jongsomjit

## WORK EXPERIENCE

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- Lecturer** Department of Chemical Engineering, Faculty of Engineering, 2018 - present  
Chulalongkorn University, Bangkok, Thailand
- Principal Investigator** High-Performance Computing Unit (CECC-HCU) 2018 - present  
Center of Excellence on Catalysis and  
Catalytic Reaction Engineering (CECC)

## RESEARCH INTERESTS

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- Catalyst Deactivation
- Computational Catalyst Design
- Multi-scale Computational Catalyst Screening
- Catalysts in Energy Storage Technology

## FUNDING

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1. 2019, **CO<sub>2</sub> Conversion to Higher Valued Products**, Malaysia-Thailand Joint Authority (MTJA)
2. 2019, **The Grant for Development of New Faculty Staff, Ratchadaphiseksomphot Endowment Fund**, Chulalongkorn University
3. 2019, **The Grant for Research Development**, Faculty of Engineering, Chulalongkorn University
4. 2019, **The Seed project**, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University
5. 2008, **Junior Science Talent Project (JSTP)**, National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology, Thailand

## HONORS AND AWARDS

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1. 2019, **Candidate for Researcher Connect Programme Thailand**, British Council and Office of the Higher Education Commission (OHEC), Thailand
2. 2017, **Richard J. Kokes award**, The North American Catalysis Society (NACS)
3. 2014 – 2018, **Ph.D. Scholarship**, Ministry of Science and Technology, Government of Thailand
4. 2010 – 2014, **Dean's list**, Faculty of Engineering, Chulalongkorn University
5. 2009 – 2014, **Junior Science Talent Project (JSTP) Scholarship**, NSTDA, Ministry of Science and Technology, Thailand
6. 2008, **Bronze medal: Chemistry Olympiad**, The 4th POSN-Chemistry Olympiad, Thailand

## TEACHING

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2105681 CATALYST DEACTIVATION	SPRING 2019
2105637 DESIGN OF INDUSTRIAL CATALYSTS	SPRING 2019
2105477 COMPUTER APPLICATION IN CHEMICAL ENGINEERING	SPRING 2019/2020
2105251 UNIT OPERATIONS I	SPRING 2019/2020
2105220 CHEMICAL ENGINEERING CHEMISTRY	FALL 2019
2105221 CHEMICAL ENGINEERING CHEMISTRY LAB	FALL 2019
2105356 UNIT OPERATIONS I LAB	FALL 2019/2020
2105633 CATALYST STABILITY	SPRING 2020

## PUBLICATIONS

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### Peer-reviewed Publications

1. Meena Rittiruam, Siriwiomol Somdee, Puwit Buapin, Nuttanon Aumnongpho, Nuttapat Kerdprasit, Tinnakorn Saelee, Soorathep Kheawhom, Nutchapon Chotigkrai, **Supareak Prasertthdam**, Piyasan Prasertthdam "On the deactivation mechanisms of MnO<sub>2</sub> electrocatalyst during operation in rechargeable zinc-air batteries studied via density functional theory," Journal of Alloys and Compounds (2021) (Accepted)
2. Shaikh, Jasmin; Shaikh, Navajsharif; Mishra, Yogendra; Pawar, Sambhaji; Shewale, Poonam; Sabale, Sandip; Kanjanaboos, Pongsakorn; **Prasertthdam, Supareak**; Lokhande, Chandrakant "The implementation of graphene-based aerogel in the field of supercapacitor," Nanotechnology 2021 (Accepted)
3. Nichakorn Buasuk, Tinnakorn Saelee, Meena Rittiruam, Suphot Phatanasri, **Supareak Prasertthdam**, Piyasan Prasertthdam "Deactivating and Non-Deactivating Coking Found on Ni-Based Catalysts during Combined Steam-Dry Reforming of Methane" Topics in Catalysis (2021). <https://doi.org/10.1007/s11244-021-01413-4>
4. Jasmin. S. Shaikh, Navajsharif S. Shaikh, Yogendra Kumar Mishra, Pongsakorn Kanjanaboos, Poonam M. Shewale, Sandip Sabale, **Supareak Prasertthdam**, Chandrakant D Lokhandea "Low cost Cu-based inorganic hole transporting materials in Perovskite solar cells: Recent Progress and state-of-art developments" Materials Today Chemistry 2021 (Accepted)
5. Chanon Auepattana-aumrung, **Supareak Prasertthdam**, Sippakorn Wannakao, Bunjerd Jongsomjit, Joongjai Panpranot, Piyasan Prasertthdam "Observation of reduction on alkane products in butene cracking over ZSM-5 modified with Fe, Cu, and Ni catalysts," Fuel, Volume 291, 2021,120265
6. Tinnakorn Saelee, Mongkol Lerdpongsiripaisarn, Meena Rittiruam, Siriwiomol Somdee, Anchittha Liu, **Supareak Prasertthdam**\*, Piyasan Prasertthdam "Experimental and computational investigation on underlying factors promoting high coke resistance in NiCo bimetallic catalysts during dry reforming of methane," Scientific Reports (2020) DOI: 10.1038/s41598-020-80287-0
7. Tinnakorn Saelee, Poonnapa Limsoonthakul, Phakaorn Aphichoksiri, Meena Rittiruam, Mongkol Lerdpongsiripaisarn, Takanori Miyake, Hiromi Yamashita, Kohsuke Mori, Yasutaka Kuwahara, **Supareak Prasertthdam**\*, Piyasan Prasertthdam, "Experimental and computational study on roles of WO<sub>x</sub> promoting strong metal support promoter interaction in Pt catalysts during glycerol hydrogenolysis," Scientific Reports (2020) DOI: 10.1038/s41598-020-79764-3
8. Oswaldo Núñez\*, Duangthip Sattayamuk, Tinnakorn Saelee, Hiromi Yamashita, Yasutaka Kuwahara, Kohsuke Mori, Piyasan Prasertthdam\*, **Supareak Prasertthdam**, "A Closer Look

Inside TiO<sub>2</sub> (P25) Photocatalytic CO<sub>2</sub>/HCO<sub>3</sub><sup>-</sup>-Reduction with Water. Methane Rate and Selectivity Enhancements,” Chemical Engineering Journal (2020)

<https://doi.org/10.1016/j.cej.2020.128141>

9. **Supareak Prasertthdam**, Meena Rittirum, Kanokpon Maungthong, Tinnakorn Saelee, Siriwirom Somdee, Piyasan Prasertthdam\*, “Performance controlled via surface oxygen-vacancy in Ti-based oxide catalyst during methyl oleate epoxidation,” Scientific Reports (2020), 10, Article number: 18952 (2020)
10. **Supareak Prasertthdam**\*, Siriwirom Somdee, Meena Rittirum, Perla B Balbuena\*, “Computational Study of the Evolution of Ni-Based Catalysts during the Dry Reforming of Methane,” Energy & Fuels, 2020, 34, 4, 4855-4864
11. Meena Rittirum, Bunjerd Jongsomjit, **Supareak Prasertthdam**\*, “A computational-experimental investigation on high ethylene selectivity in ethanol dehydration reaction found on WO<sub>x</sub>/ZrO<sub>2</sub>-activated carbon bi-support systems,” Scientific Reports, 9, Article number: 19738 (2019)
12. Ryan Dula Corpuz, Lyn Marie Z. De Juan, **Supareak Prasertthdam**, Rojana Pornprasertsuk, Tetsu Yonezawa, Mai Thanh Nguyen, Soorathep Kheawhom\*, “Annealing induced a well-ordered single crystal  $\delta$ -MnO<sub>2</sub> and its electrochemical performance in zinc-ion battery,” Scientific Reports, (2019), 9, Article number: 15107 (2019)
13. Soraya Hosseini, Ali Abbasi, Luc-Olivier Uginet, Nicolas Hastraete, **Supareak Prasertthdam**, Tetsu Yonezawa, Soorathep Kheawhom\*, “The Influence of Dimethyl Sulfoxide as Electrolyte Additive on Anodic Dissolution of Alkaline Zinc-Air Flow Battery,” Scientific Reports, (2019), 9, Article number: 14958 (2019)
14. Anchittha Liu, **Supareak Prasertthdam**, and Suphot Phatanasri\*, “Investigation on the increased stability of the Ni-Co bi-metallic catalysts for the carbon dioxide reforming of methane,” Catalysis Today, (2019) <https://doi.org/10.1016/j.cattod.2019.07.047>
15. Sutaporn Meephon, Thanyada Rungrotmongkol, Somchintana Puttamat, **Supareak Prasertthdam** and Varong Pavarajarn\*, “[Heterogeneous photocatalytic degradation of diuron on zinc oxide: Influence of surface-dependent adsorption on kinetics, degradation pathway, and toxicity of intermediates](#),” Journal of Environmental Sciences, (2019), 84, 97-111.
16. **S. Prasertthdam** and P. B. Balbuena\*, “[Evaluation of dry reforming reaction catalysts via computational screening](#),” Catalysis Today, (2018), 312, 23-34.
17. **Supareak Prasertthdam** and Perla B. Balbuena\*, “[Performance evaluation of catalysts in the dry reforming reaction of methane via the ratings concept](#),” Reaction Kinetics, Mechanisms and Catalysis (Springer Publications), (2017), 122(1), 53-68.

18. **Supareak Prasertthdam** and Perla B. Balbuena\*, "[Effects of oxygen coverage, catalyst size, and core composition on Pt-alloy core-shell nanoparticles for the oxygen reduction reaction](#)," Catalysis Science & Technology (RSC Publications), (2016), 6, 5168-5177
19. Shaima Nahreen, **Supareak Prasertthdam**, Saul Perez Beltran, Perla B. Balbuena\*, Sushil Adhikari\* and Ram B. Gupta\* "[Catalytic upgrading of methane to higher hydrocarbon in a non-oxidative chemical conversion](#)," Energy & Fuels (ACS Publications), (2016), 30(4), 2584-2593
20. G. Ramos-Sanchez, **S. Prasertthdam**, F. Godinez-Salomon, C. Barker, M. Moerbe, H. A. Calderon, L. A. Lartundo, M. A. Leyva, O. Solorza-Feria, P. B. Balbuena\*, "[Challenges of modelling real nanoparticles: Ni@Pt electrocatalysts for the oxygen reduction reaction](#)," Phys. Chem. Chem. Phys. (RSC Publications), (2015), 17(42), 28286-28297
21. **Supareak Prasertthdam**, Peangpit Wongmaneevil, Bunjerd Jongsomjit\*, "[Investigation of different modifiers for nanocrystal zirconia on W/ZrO<sub>2</sub> catalysts via esterification](#)," Journal of Industrial and Engineering Chemistry, (2010), 16(6), 935-940
22. **Prasertthdam, S.**, Jongsomjit, B.\*, "[Observation on different turnover number in two-phase acid-catalyzed esterification of dilute acetic acid and 1-heptanol](#)," Catalysis Letters, (2009), 130 (3-4), 583-587

#### Peer-reviewed Symposium Publications

1. Siriwiwimol Somdee, **Supareak Prasertthdam**\*, "A theoretical analysis on the coke resistance of noble metal-based catalysts in the dry reforming reaction of methane," the 8th Asia-Pacific Congress in Catalysis (APCAT) in Bangkok, Thailand on 4-7 August 2019 (Oral Presentation)
2. Mongkol Lerdpongpiripaisarn, **Supareak Prasertthdam**\*, "Effects of coking on the stability of the monometallic and bimetallic Ni-Co system during the dry reforming reaction of methane: a density functional theory analysis," the 8th Asia-Pacific Congress in Catalysis (APCAT) in Bangkok, Thailand on 4-7 August 2019 (Oral Presentation)
3. Bunjerd Jongsomjit, **Supareak Prasertthdam**\*, "Investigation on high ethylene selectivity during ethanol dehydration found on the tungsten catalysts supported on the ZrO<sub>2</sub> activated carbon bi-support systems," the 8th Asia-Pacific Congress in Catalysis (APCAT) in Bangkok, Thailand on 4-7 August 2019 (Poster Presentation)
4. **Supareak Prasertthdam**, "Combined Experimental-Computational Multi-Scale Studies in Catalysis," the 23rd International Annual Symposium on Computational Science and Engineering (ANSCSE23) in Chiang Mai University, Chiang Mai, Thailand, during 27-29 June, 2019. (Oral Presentation)
5. Siriwiwimol Somdee, Mongkol Lerdpongpiripaisarn, and **Supareak Prasertthdam**, "A DFT-based Stability Screening for Dry Reforming Catalysts via the Ratings Concept," the 23rd International

Annual Symposium on Computational Science and Engineering (ANSCSE23) in Chiang Mai University, Chiang Mai, Thailand, during 27-29 June, 2019. (**Oral Presentation**)

6. **Supareak Prasertthdam**, Perla B. Balbuena, “A DFT study on reactivity and coke-resistance of metallic, carbide and oxide phases of Ni formed during the dry reforming of methane,” the 7th International Thai Institute of Chemical Engineering and Applied Chemistry Conference (ITChE 2017) and the 27th National Thai Institute of Chemical Engineering and Applied Chemistry Conference (TICChE 2017) in Bangkok, Thailand on 18–20 October 2017 (**Oral Presentation**)
7. **Supareak Prasertthdam**, Perla B. Balbuena, “Surface Transformation Between Ni, NiO and Ni<sub>3</sub>C during the Dry Reforming of CH<sub>4</sub>: A DFT Study on Reactivity and Coke-Resistance,” The 25th North American Meeting (NAM25) in Denver, Colorado, USA on 4-9 June 2017 (**Richard J. Kokes award oral Presentation**)
8. **Supareak Prasertthdam**, Perla B. Balbuena, “Investigation of coke formation on Ni catalysts prepared by atomic layer deposition,” The 16th International Congress on Catalysis (ICC 16) in Beijing, China on 3-8 July 2016 (**Poster Presentation**)
9. **Supareak Prasertthdam**, Perla B. Balbuena, “Fundamental insights into the connection between homogeneous and heterogeneous catalysts via DFT analyses,” 2015 AIChE Annual Meeting in Salt Lake City, Utah on 8-13 November 2015 (**Poster Presentation**)
10. **Supareak Prasertthdam**, Luis E. Camacho-Forero, Jose M. Berrio, Guadalupe Ramos-Sanchez, Perla B. Balbuena, “Evolution of Nanoalloy Surfaces under Oxidation,” 24th North American Meeting (NAM) in Pittsburgh, Pennsylvania on 14-19 June 2015 (**Poster Presentation**)
11. **Supareak Prasertthdam**, Bunjerd Jongsomjit, “Esterification of heptanol with acetic towards liquid and solid catalysts,” 22nd SYMPOSIUM OF MALAYSIAN CHEMICAL ENGINEERS (SOMChE) and the 15th REGIONAL SYMPOSIUM ON CHEMICAL ENGINEERING (RSCE), Kuala Lumpur, Malaysia on 2-3 December 2008 (**Oral Presentation**)

#### INTERNATIONAL COMMITTEE IN SEMINAR, CONFERENCES, AND WORKSHOPS

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- **Computational Chemistry Program Chair, Committee:** the 24th International Annual Symposium on Computational Science and Engineering (ANSCSE24) (online), 28<sup>th</sup> -30<sup>th</sup> April 2021, Bangkok, Thailand
- **Subcommittee:** The 21th International Union of Materials Research Societies Conference in Asia 2020 (IUMRS-ICA 2020), 23<sup>rd</sup> – 26<sup>th</sup> February 2021, Chiang Mai University, Chiang Mai, Thailand
- **Organizing Committee:** 4<sup>th</sup> World Congress & expo on Chemical Engineering & Catalysis, 14<sup>th</sup>-16<sup>th</sup> June 2021 in Osaka, Japan

- **Organizing Committee:** The 2020 CECC-HCU e-Summer School on VASP for Computational Catalysis, 8<sup>th</sup>-30<sup>th</sup> June 2020 at Chulalongkorn University, Thailand
- **Organizing Committee:** The 1st CECC International Seminar on Computational Catalysis (InterSeCC1), 22<sup>nd</sup> November 2019 at Chulalongkorn University, Thailand
- **Co-organizing Committee:** 5th International Conference of Chemical Engineering & Industrial Biotechnology (ICCEIB 2020), 9<sup>th</sup>-11<sup>th</sup> August 2020, Malaysia
- **National Scientific Committee:** the 23rd International Annual Symposium on Computational Science and Engineering (ANSCSE23) during 27-29 June 2019 in Chiang Mai University, Chiang Mai, Thailand,
- **Organizing committee:** International Conference and Exhibition on Catalysis and Green Technology (CATGC 2019), 10-11 October 2019, Singapore
- **Organizing committee:** the 8th Asia-Pacific Congress in Catalysis (APCAT8), 4-7 August 2019, Bangkok, Thailand

#### JOURNAL EDITORIAL BOARDS

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- **Frontiers in Chemical Engineering:** Review Editor on the Editorial Board of Sustainable Process Engineering
- **Frontiers in Catalysis:** Review Editor on the Editorial Board of Modelling, Theory and Computational Catalysis

#### PROFESSIONAL AFFILIATIONS

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##### USA

Member of the American Institute of Chemical Engineers (AIChE),

##### Thailand

Member of the Thai Institute of Chemical Engineering and Applied Chemistry (TICChE)

Member of the Council of Engineers (COE),

Secretary and member of The Catalysis and Reaction Engineering Association (CREA)