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Expertise : Physical Chemistry, Inorganic Chemistry, Chemical Engineering  
Research Interest : Heterogeneous Catalysis, Green and Sustainable Chemistry, Chemical Reaction Engineering, Material Chemistry

### **Educational Background**

08.2003 – 07.2007 : **Bachelor of Engineering (B.Eng)** chemical engineering department, Institut Teknologi Sepuluh Nopember/Indonesia.  
09.2007 – 07.2009 : **Master of Science (M.Sc.)** in chemical engineering, National Cheng-Kung University/Taiwan.  
**M.Sc. thesis:** Preparation of Pt/Si-nanowires for photoelectrochemical cells (under supervision of Prof. Dr. Dong-Hwang Cheng)  
12.2009 – 06.2012 : **Junior lecturer & Researcher** at chemical engineering department Sebelas Maret University/Indonesia in the group of advanced materials led by Dr. Agus Purwanto  
**Research topic:** Development of solid materials for heterogeneous catalysis in biodiesel production  
09.2012 – 10.2016 : **Doktor der Naturwissenschaften (Dr. rer. nat.)** from RWTH Aachen/Germany with Prof. Dr. Regina Palkovits  
**Research topic:** Development of modified ZrO<sub>2</sub> catalysts for levulinic acid esters production  
11.2016 – 11.2017 : **Postdoctoral researcher** at BCI TU Dortmund/Germany with Dr. Andreas J. Vorholt and Prof. Dr. Arno Behr/Prof. Dr. Dieter Vogt.  
**Research topic:** Development of catalytic processes for terpene conversion to fine chemicals (funded by Symrise AG)  
12.2017 – 03.2020 : **Postdoctoral researcher** at Inorganic Chemistry and Catalysis Utrecht University/Netherlands in the group of Prof. Dr. Pieter C. A. Bruijninx  
**Research topic:** Interfacial catalysis in biphasic system in Pickering emulsion (NWO grant under Prof. P. C. A. Bruijninx)  
12.2009 – 05.2023 : **Junior lecturer** at Chemical Engineering and Chemistry Education Sebelas Maret University (Indonesia)  
11.2023 – 11.2024 : **Research Associate** at the Institute of General & Ecological Chemistry in the group of Prof. Agnieszka Ruppert of Lodz University of Technology (Poland)

**Research topic:** Catalytic hydrogenation of sugar-based building blocks to renewable monomers (funded by OPUS-LAP grant under Prof. Ruppert)

05.2023 – present : **Assistant professor** at Chemistry Education Department at Sebelas Maret University (Indonesia)

### Publications in refereed international journals

1. Y. P. Budiman, M. R. S. Sidik, M. D. Permana, K. Haikal, I. I. Widiyowati, Y. Permana, U. S. F. Arrozi, W. Ciptonugroho, T. Mayanti, A. P. Sulaeman, W. W. Lestari, [Catalytic efficiency of Cu-MOFs: HKUST-1 and CuBDC for the protodeboronation of aryl boronic acids](#), *RSC Advances* 15 (2025) 29453 <https://doi.org/10.1039/D5RA04172D>
2. U. S. F. Arrozi, I. Irnanda, M. R. Pratama, Y. Permana, S. H. Qurbayni, W. W. Lestari W. Ciptonugroho, H. W. Wijaya, Y. P. Budiman, Etherification of furfuryl alcohol catalyzed by vanadium-modified MOF-808: Thermocatalysis and UV-assisted thermocatalysis, *Applied Catalysis A* 706 (2025) 120472 <https://doi.org/10.1016/j.apcata.2025.120472>
3. A. Fitriyaningsih, W. W. Lestari, W. Ciptonugroho, F. Azhari, U. S. F. Arrozi, Y. P. Budiman, V. B. Saputra, [Synergistic improvement of catalytic efficiency in UiO-67\(Zr\) via Nickel\(II\) modification for the conversion of ethyl Levulinate to  \$\gamma\$ -Valerolactone](#), *Inorganic Chemistry Communications* 180, (2025) 114945 <https://doi.org/10.1016/j.inoche.2025.114945>
4. F. Azhari, D. W. T. Wulansari, W. Ciptonugroho, W. W. Lestari, A. Fitriyaningsih, U. S. F. Arrozi & Y. P. Budiman, [The effect of modulator in the synthesis of UiO-66\(Zr\) and UiO-67\(Zr\) and their performances in catalytic transfer hydrogenation reaction of  \$\alpha\$ -angelica lactone to  \$\gamma\$ -valerolactone](#), *Research on Chemical Intermediates* 50 (2024) 5755 <https://doi.org/10.1007/s11164-024-05435-x>
5. Y. P. Budiman, M. Rashifari, S.I Azid, I. Z. Ghafara, Y. Deawati, Y. Permana, U. S. Fahrudin Arrozi, W. Ciptonugroho, T.i Mayanti, W. W. Lestari, [HKUST-1-Catalyzed Homocoupling of Arylboronic Acids](#), *ChemistrySelect* 9 (2024) e202304913 (<https://doi.org/10.1002/slct.202304913>)
6. U. S. F. Arrozi, R. Pratama, F. Soraya, Y. Permana, S. Hartina, E. Salduna, W. W. Lestari, W. Ciptonugroho, Yudha P. Budiman, [Solvent-Free Oxidation of Benzyl Alcohol Using Modified Zeolitic Imidazolate Frameworks-8 \(ZIF-8\) Catalysts](#), *ChemistrySelect* 9 (2024) e202304882 <https://doi.org/10.1002/slct.202304882>
7. E. O. Ningrum, I. S. Azhar, W. Ciptonugroho, Sumiyah Sabard, S. Suprpto, A. D. Karismaa, M. J. K. Kamadjaja, T. A. Margaretha, N. U. Khoirummata'Addunya, [Fabrication and characterization of local blue crab shell \(\*Portunus pelagicus\*\)-based composite filament polycaprolactone-hydroxyapatite \(PCL/HAp\) scaffold for bone substitution](#), *Chemistry Select* (accepted 20 June 2024) <https://doi.org/10.1002/slct.202303971>
8. E. Pramuja, W. W. Lestari, W. Ciptonugroho, F. Azhari, R. S. J. R. Suharbiansah, U. S. F. Arrozi, Y. P. Budiman, [Catalytic Transfer Hydrogenation of  \$\alpha\$ -Angelica Lactone over Nickel \(II\) Modified UiO-66 Metal Organic Framework under Mild Conditions](#), *Materials*

*Chemistry and Physics* 322 (2024) 129546.

<https://doi.org/10.1016/j.matchemphys.2024.129546>

9. [W. Ciptonugroho\\*](#), J. B. Mensah, M. G. Al-Shaal, R. Palkovits, [WO<sub>x</sub>/ZrO<sub>2</sub> catalysts for the conversion of α-angelica lactone with butanol to butyl levulinates](#), *Chemical Papers* 77 (2023) 3769 <https://doi.org/10.1007/s11696-023-02739-x>
10. E. O. Ningrum, A. Subyakto, [W. Ciptonugroho](#), S. Lorensa, D. A. Ramadhani, [Flocculation performance of industrial sugarcane juice by acrylamide-based anionic flocculant](#), *Indonesian Journal of Chemistry* 3 (2023) 33 <https://doi.org/10.22146/ijc.73150>
11. E. O. Ningrum, T. Gotoh, [W. Ciptonugroho](#), A. D. Karisma, E. Agustiani, Z. M. Safitri, M. A. Dzaky, [Novel Thermosensitive-co-Zwitterionic Sulfobetaine Gels for Metal Ion Removal: Synthesis and Characterization](#), *Gels* 7 (2021) 273 <https://doi.org/10.3390/gels7040273>
12. F. Qiang, C. M. Vis, [W. Ciptonugroho](#), P. C. A. Bruijninx, [Recent developments in catalysis with Pickering emulsions](#), *Green Chemistry* 23 (2021) 2575 <https://doi.org/10.1039/D0GC03604H>
13. C. M. Pichler, M. G. Al-Shaal, D. Gu, H. Joshi, [W. Ciptonugroho](#), F. Schueth, [Ruthenium supported on high surface area zirconia as an efficient catalyst for the base-free oxidation of 5-Hydroxymethylfurfural to 2,5-Furandicarboxylic Acid](#), *Chemsuschem* 11 (2018) 2083. <https://doi.org/10.1002/cssc.201800448>
14. X. Yi, M. G. Al-Shaal, [W. Ciptonugroho](#), I. Delidovich, X. Wang, R. Palkovits, [Synthesis of Butyl Levulinate Based on α-Angelica Lactone in the Presence of Easily Separable Heteropoly Acid Catalysts](#), *Chemsuschem* 10 (2017) 1494. (selected as very important paper, VIP by Chemsuschem) <https://doi.org/10.1002/cssc.201601882>
15. M. Jabłońska, [W. Ciptonugroho](#), V. Girman, M. G. Al-Shaal, R. Palkovits, [Preparation, characterization and catalytic performance of Ag-modified mesoporous TiO<sub>2</sub> in low-temperature selective ammonia oxidation into nitrogen and water vapour](#), *Microporous Mesoporous Materials* 245 (2017) 31. <https://doi.org/10.1016/j.micromeso.2017.02.070>
16. [W. Ciptonugroho](#), M. G. Al-Shaal, J. B. Mensah, R. Palkovits, [One pot synthesis of WO<sub>x</sub>/mesoporous-ZrO<sub>2</sub> catalysts for the production of levulinic acid esters](#), *Journal of Catalysis* 340 (2016) 17 <https://doi.org/10.1016/j.jcat.2016.05.001>
17. M. G. Al-Shaal, [W. Ciptonugroho](#), F. J. Holzhäuser, J. B. Mensah, P. J. C. Hausoul, R. Palkovits, [Catalytic upgrading of α-angelica lactone to levulinic acid esters under mild conditions over heterogeneous catalysts](#), *Catalysis Science & Technology* 5 (2015) 5168. <https://doi.org/10.1039/C5CY00446B>

## Reviewing activities in refereed international journals

No.	Journal	Publisher
1	Catalysis Science & Technology	Royal Society Chemistry (RSC)
2	ChemistrySelect	Wiley-VCH
3	Chemical Papers	Springer Nature
4	Indonesian Journal of Chemistry	Universitas Gadjah Mada
5	Reaction Chemistry and Engineering	Royal Society Chemistry (RSC)
6	Journal of Material Chemistry A	Royal Society Chemistry (RSC)
7	Journal of Environmental Chemical Engineering	Elsevier
8	Energy & Environment	SAGE Publishing
9.	American Institute of Chemical Engineers Journal (AIChE J.)	Wiley