# **DAFTAR RIWAYAT HIDUP**

**Identitas Diri**

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| 1. | Nama Lengkap (dengan gelar) | Yayuk Astuti, S.Si, Ph.D |
| 2. | Jenis Kelamin | Perempuan |
| 3. | Pangkat/Golongan | Pembina/IVA |
| 4. | Jabatan Fungsional | Lektor Kepala |
| 5. | N I P | 198209182006042001 |
| 6. | NIDN | 0018098203 |
| 7. | Tempat dan Tanggal Lahir | Kudus, 18 September 1982 |
| 8. | E-mail | yayuk.astuti@live.undip.ac.id |
| 9. | Nomor Telepon / HP | 08567350285 |
| 10. | Alamat Kantor | Kampus FSM UNDIP Jl. Prof Jacob Rais, Tembalang Semarang 50271 |
| 11. | Nomor Telepon / Faks. | 024-76480824 |
| 12. | Mata Kuliah yang diampu | Kimia Zat Padat, Kimia Fisik II, Kinetika Reaksi, Dinamika Reaksi, Kimia Katalis, Kimia Koloid dan Permukaan, Kimia Dasar, Kimia Material (S2), Pemisahan dan Elusidasi Struktur Senyawa Anorganik (S2), Kimia Zat Padat Lanjut (S2) |

**Riwayat Pendidikan Tinggi**

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| No | Keterangan | Sarjana | Magister | Doktor |
| 1. | Nama Perguruan Tinggi | Universitas Diponegoro | - | Newcastle University, UK |
| 2. | Bidang Ilmu | Kimia | - | Advanced Materials |
| 3. | Tahun Masuk – Lulus | 2001-2005 | - | 2009-2014 |
| 4. | Judul Skripsi/ Tesis/Disertasi | Isolasi, Identifikasi dan uji Toksisitas senyawa aktif fraksi metilen klorida dari tanaman purwoceng (*Pimpinella alpina* Molk) | - | Novel Treatments of Nano- and Micro-sized diamond Powders |
| 5. | Nama Pembimbing/ Promotor | Dr. Meiny Suzery, M.S  Dr. Bambang Cahyono, M.S | - | Prof. Dr. Lidija Siller  Dr. Alasdair Charles |

**Riwayat Kepangkatan**

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| No. | Pangkat | Golongan | TMT |
| 1. | Penata Muda | III A | 01 April 2006 |
| 2. | Penata | III C | 01 April 2019 |
| 3. | Penata Tk 1 | III D | 01 April 2021 |
| 4. | Pembina | IV A | 01 April 2023 |

**Riwayat Jabatan Akademik**

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| No. | Jabatan Akademik | TMT |
| 1. | Asisten Ahli | 01 Januari 2009 |
| 2. | Lektor | 01 September 2018 |
| 3. | Lektor Kepala | 01 Juni 2021 |

**Riwayat Jabatan Tugas Tambahan**

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| No. | Jabatan Tugas Tambahan | TMT |
| 1. | Kepala Lab. Kimia Dasar | 2021-sekarang |
| 2. | Gugus Penjaminan Mutu Dept. Kimia FSM | 2016-2018 |
| 3. | Tim Task Force WCU Undip | 2021-sekarang |
| 4. | Tim task Force SDGs Undip | 2022-sekarang |
| 5. | Koordinator IKU PTNBH dan Renstra Undip FSM | 2024 |
| 6. | Koordinator alumni Dept. Kimia FSM | 2015-sekarang |

**Pengalaman Penelitian dalam 10 Tahun Terakhir**

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| --- | --- | --- | --- |
| No. | Tahun | Judul Penelitian | Sumber Dana |
| 1. | 2016 | Studi pengaruh modifikasi permukaan nanodiamond terhadap kemampuan nanodiamond dalam pemuatan (loading) dan pelepasan (release) obat  (Penelitian Fundamental-Ketua) | DANA BOPTN 2016 |
| 2. | 2016 | Nickel impregnated silica membrane; synthesis and application for sea water purification  (Penelitian riset dan publikasi internasional (RPI)-Anggota) | DANA PNBP UNDIP 2016 |
| 3. | 2016 | Sintesis *surfactant modified active carbon* (SMAC) berbahan sekam padi sebagai adsorben limbah logam berat  (Penelitian Fundamental-Anggota) | DANA BOPTN 2016 |
| 4. | 2016 | Pengaruh agen pengendap terhadap morfologi partikel dan sifat fotokatalitik bismuth oksida pada sintesisnya menggunakan metode presipitasi berbahan dasar bismuth pentahidrat (Bi(NO3)3.5H2O)  (Penelitian Madya-Ketua) | DANA DIPA FSM UNDIP 2016 |
| 5. | 2016-2017 | Sintesis membran silika termodifikasi alkiltriethoksisilan untuk desalinasi air laut  (Penelitian Fundamental-Anggota) | DANA BOPTN 2016-2017 |
| 6. | 2017 | Sintesis dan karakterisasi bismut oksida menggunakan metode sol gel serta uji aktivitas fotokatalisnya  (Penelitian Madya-Ketua) | DANA DIPA FSM UNDIP 2017 |
| 7. | 2018-2019 | Sintesis dan karakterisasi bismut oksida dengan metode solution combustion sebagai fotokatalis untuk degradasi limbah senyawa organik  (Penelitian Hibah Kompetensi (HIKOM)- Ketua) | DANA BOPTN 2018 -2019 |
| 8. | 2018-2019 | Development of method for synthesis of bismuth oxide as potential candidate for visible-light photocatalyst  (Penelitian Riset Publikasi Internasional (RPI)-Ketua) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2017/2018-2019 |
| 9. | 2020-2021 | Sintesis komposit bismut oksida-karbon aktif untuk elektroda baterai  (Penelitian Dasar-Ketua) | DANA PNBP RISTEK BRIN 2020-2021 |
| 10. | 2020 | Sintesis dan karakterisasi bismut oksida menggunakan metode sol gel serta uji aktivitas fotokatalisnya  (Penelitian Madya-Ketua) | DANA DIPA FSM UNDIP 2017 |
| 11. | 2021 | Physicochemical properties, electrical conductivity and photocatalytic activity of bismuth oxide prepared by hydrothermal method  (Penelitian Riset Publikasi Internasional (RPI)-Ketua) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2021 |
| 12. | 2021-2023 | Sintesis dan karakterisasi komposit metal oksida dan material berbasis karbon untuk elektroda baterai  (Penelitian World Class Research University-Ketua) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2021-2023 |
| 13. | 2021-2023 | Membran karbon pada substrat alumina untuk desalinasi  (Penelitian World Class Research University-Anggota) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2021-2023 |
| 14. | 2021 | Sintesis dan karakterisasi thin film berbahan dasar silika geothermal dengan penambahan AgNO3 serta uji aktivitas antibakterinya  (Penelitian Madya-Ketua) | Dana selain APBN FSM UNDIP 2021 |
| 15. | 2021-2022 | Eksplorasi pigmen absorber berbasis nanoceria sebagai mitigasi alternatif efek Urban Heat Island  (Penelitian Dasar Unggulan Perguruan Tinggi (PDUPT)-Anggota) | Dana DRPM 2021 |
| 16. | 2022-2023 | Synthesis and characterization of bismuth sulfide/activated carbon fiber composite for lithium-ion battery electrode  (Penelitian Riset Publikasi Internasional (RPI)-Ketua) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2022-2023 |
| 17 | 2022 | Pengembangan komposit metal-oxide termodifikasi carbon quantum-dot (MO/CQD) sebagai material fotokatalis yang efisien pada cahaya tampak  (Penelitian Riset Kolaborasi Indonesia (RKI) skema A- co-host/mitra) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2022 |
| 18. | 2022 | Synthesis, characterisation, and evaluation of photocatalytic activity of zinc oxide nanoparticles by doping cerium  (Penelitian Riset Publikasi Internasional (RPI)-Anggota) | DANA selain APBN DPA SUKPA LPPM Universitas Diponegoro 2022 |
| 19. | 2023 | Pengembangan material fotokatalis semikonduktor carbon quantum dots modified metal oxide untuk anti bakteri dan degradasi air terkontaminasi pestisida  (Penelitian Riset Kolaborasi Indonesia (RKI) skema C-co-host/mitra) | DANA selaian APBN Undip 2023 |
| 20. | 2023 | Sintesis dan karakterisasi bismuth-rich oksiiodida untuk uji fotokatalitik pada zat warna  (Penelitian Madya-Ketua) | Dana selain APBN FSM UNDIP 2023 |
| 21. | 2023 | Pengembangan material komposit Bi2S3/C dengan memanfaatkan sekam padi sebagai sumber karbon untuk aplikasi anoda baterai  (Penelitian Fundamental Reguler-Ketua) | DANA DIPA Direktorat Riset, Teknologi dan Pengabdian Masyarakat (DRTPM), Kemendikbud Ristek 2023 |
| 22. | 2023 | Teknologi Hybrid Fenton-Electrochemical sebagai Unit Post Treatment IPAL Industri Tekstil  (Riset dan Inovasi untuk Indonesia Maju (RIIM)-Anggota) | DANA RISPRO LPDP 2023 |
| 23. | 2023/2024 | Pengembangan material thin film berbasis silika dengan penambahan agen anti bakteri untuk pelapis permukaan material kaca  (Riset dan Inovasi untuk Indonesia Maju (RIIM)-Ketua) | DANA RISPRO LPDP 2023/2024 |
| 24. | 2023-2024 | Pengembangan material anti bakteri dan pendegradasi polutan organik berbasis zinc oxide termodifikasi carbon kuantum dot (ZnO/CQD)  (Hibah Penelitian Terapan-Anggota) | Dana PNBP UNS 2023 dan 2024 |
| 25 | 2024 | Pengembangan material *carbon quantum dots* (CQDs) untuk *nanofertilizer* sebagai upaya memperkuat ketahanan pangan  (Penelitian World Class Research University-Ketua) | DANA Selain APBN Undip 2024 |
| 26 | 2024 | Pengembangan material komposit bismut sulfida/karbon aktif/grafit untuk anoda baterai  (Penelitian Fundamental Reguler-Ketua) | DANA DIPA Direktorat Riset, Teknologi dan Pengabdian Masyarakat (DRTPM), Kemendikbud Ristek 2024 |
| 27 | 2024 | Modifikasi polimer nanofiber pada permukaan *current collector* untuk peningkatan performa anode- *free*  *lithium battery*  (Penelitian Fundamental Reguler-Anggota) | DANA DIPA Direktorat Riset, Teknologi dan Pengabdian Masyarakat (DRTPM), Kemendikbud Ristek 2024 |

**Pengalaman Pengabdian kepada Masyarakat dalam 10 Tahun Terakhir**

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| --- | --- | --- | --- |
| No. | Tahun | Judul Pengabdian Kepada Masyarakat | Sumber Dana |
| 1 | 2016 | Penerapan program komputasi kimia berbasis windows dan linux untuk peningkatan kualitas penguasaan materi kimia bagi guru-guru kimia se Jawa Tengah | DANA DIPA FSM UNDIP 2016 |
| 2 | 2017 | Pelatihan pembuatan cairan pembersih keramik bagi ibu-ibu PKK Puri Asri Perdana RT 02 RW 16 Banyumanik Semarang | DANA DIPA FSM UNDIP 2017 |
| 3 | 2017 | Peningkatan penguasaan ilmu kimia bagi mahasiswa kimia UKSW melalui pelatihan kimia komputasi berbasis LINUX | DANA DIPA FSM UNDIP 2017 |
| 4 | 2018 | Pelatihan Pembuatan Kertas Daur Ulang dari Limbah Kertas bagi Ibu-Ibu PKK RT 02/RW 02, Kelurahan Bulusan, Kecamatan Tembalang, Kodya Semarang | DANA DIPA FSM UNDIP 2018 |
| 5 | 2018 | Pelatihan Pembuatan Bawang Hitam | DANA MANDIRI |
| 6 | 2018 | Pengolahan Sampah/Limbah Rumah Tangga Menjadi Bahan Bernilai Ekonomi | DANA MANDIRI |
| 7 | 2018 | Pelatihan Komputasi Kimia bagi Mahasiswa Kimia se-Jawa Tengah dan Daerah Istimewa Yogyakarta (JATENG &amp; DIY) "Branch Out Chemistry with Computation | DANA MANDIRI |
| 8 | 2019 | Penyuluhan Makanan Sehat dan Bahan Tambahan Pangan bagi Anak Sekolah | DANA DIPA FSM UNDIP 2019 |
| 9 | 2019 | Pentingnya menjaga kebersihan badan dan pelatihan pembuatan sabun cuci tangan bagi anak-anak di SD Bulusan | DANA DIPA FSM UNDIP 2019 |
| 10 | 2020 | Pemanfaatan karbon sebagai aditif pembuatan sabun cuci piring *charcoal* | DANA NON APBN FSM UNDIP 2020 |
| 11 | 2020 | Pembuatan *hand sanitizer* dalam upaya pencegahan terkena covid-19 | DANA MANDIRI |
| 12 | 2020 | Penjernihan Minyak Jelantah Menggunakan Karbon Aktif Tempurung Kelapa Bagi PKK RT 02 RW 16 Kelurahan Padangsari Banyumanik Semarang | DANA NON APBN FSM UNDIP 2020 |
| 13 | 2020 | Peningkatan Kualitas dan Produktifitas Batik Tulis Bakaran dengan Pemberdayaan UMKM sebagai Komoditas Unggulan Kabupaten Pati | DANA SELAIN APBN LPPM UNDIP 2020 |
| 14 | 2021 | Pengenalan Kimia kepada siswa Sekolah Muda Mandiri (SMM) Ar Ridho Meteseh, Tembalang, Semarang | DANA NON APBN FSM UNDIP 2021 |
| 15 | 2021 | Peningkatan kualitas dan produktivitas batik tulis bakaran dengan pemberdayaan umkm sebagai komoditas unggulan kabupaten PATI | DANA SELAIN APBN LPPM UNDIP 2021 |
| 16 | 2021 | Pembuatan Hand Sanitizer yang Aman untuk Kulit Dalam Rangka Pencegahan Penularan Virus dan Bakteri di RT/RW 01/01 Kel. Bulusan , Kec.Tembalang Kota Semarang | DANA NON APBN FSM UNDIP 2021 |
| 17 | 2022 | Pelatihan Sibori | DANA NON APBN FSM UNDIP 2022 |
| 18 | 2023 | Pelatihan Pembuatan Barang Kerajinan dari Plastik Bekas Kemasan Produk Rumah Tangga | DANA NON APBN FSM UNDIP 2023 |
| 19 | 2023 | Pemanfaatan Sampah Organik Rumah Tangga Menjadi Produk Eco Enzyme Dalam Rangka Menuju Zero Waste Untuk Mendukung SDGs 13 Penanganan Perubahan Iklim | DANA SELAIN APBN LPPM UNDIP 2023  (interaksi dosen-mahasiswa KKN) |

**Publikasi Artikel Ilmiah Jurnal Nasional dalam 10 Tahun Terakhir**

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| --- | --- | --- | --- | --- |
| No. | Tahun | Judul Artikel Ilmiah | Nama Jurnal | Vol./ No./ Hal. |
| 1 | 2017 | Pengaruh CoO dan TiO2 terhadap warna glasir porselen ZnO | Jurnal Kimia Sains dan Aplikasi | **20** (2): 95-98  ISSN: 1410-8917  ejournal.undip.ac.id/index.php/ksa/article/view/16712 |
| 2 | 2017 | Pengaruh Variasi Waktu Hidrotermal terhadap Sintesis dan Karakterisasi Nanokristal Zeolit A dari Abu Sekam Padi | Jurnal Kimia Sains dan Aplikasi | **20** (2): 79-83  ISSN: 1410-8917  [ejournal.undip.ac.id/index.php/ksa/article/view/16709/12160](https://ejournal.undip.ac.id/index.php/ksa/article/view/16709/12160) |
| 3 | 2017 | Sintesis Zeolit dari Abu Sekam Padi menggunakan Metode Hidrotemal :Variasi Waktu dan Temperatur | Jurnal Kimia Sains dan Aplikasi | **20** (2): 58-61  ISSN: 1410-8917  https://ejournal.undip.ac.id/index.php/ksa/article/view/16705 |
| 4 | 2018 | Synthesis of Zeolite from Bagasse and Rice Husk Ashes as Surfactant Builder on Detergency Process: Variation of NaOH Concentration for Silica Isolation | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | **21** (3): 139-143  ejournal.undip.ac.id/index.php/ksa/article/view/19382/pdf |
| 5 | 2018 | Synthesis of Zeolite from Sugar Cane as Detergent Builder: Variation of Si/Al Ratio and Hydrothermal Time | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | **21** (1): 24-28  ejournal.undip.ac.id/index.php/ksa/article/view/17556/12978 |
| 6 | 2018 | Utilization and Characterization of Oyster Shell as Chitosan and Nanochitosan | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | **21** (4): 224-231  ejournal.undip.ac.id/index.php/ksa/article/view/19729/pdf |
| 7 | 2018 | Zeolite and Charcoal as Potential Adsorbents in Tubs of Oxydation Ditch I and Oxydation Ditch II at Water Treatment and Composting Plant (WTCP) PT. Djarum Kudus | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | **21** (2): 75-79  ejournal.undip.ac.id/index.php/ksa/article/view/18636/13311 |
| 8 | 2019 | The Effect of Ratio LiBOB:TiO2 of Electrolyte Polymer Sheets as separators on the Electrochemical Performance of LTO-Based Lithium-Ion Batteries | Jurnal Kimia dan Sains Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | 22(4): 136-142  <https://ejournal.undip.ac.id/index.php/ksa/article/view/22978/15571> |
| 9 | 2019 | The Effect of Ratio LiBOB:TiO2 of Electrolyte Polymer Sheets as separators on the Electrochemical Performance of LTO-Based Lithium-Ion Batteries | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | 22 (4) : 136-142  <https://ejournal.undip.ac.id/index.php/ksa/article/view/22978/15571> |
| 10 | 2019 | Adsorption of HDTMA-Br Surfactant with Concentration Variation by Rice Husk-Based Activated Carbon Produced by Variation of Carbonization Temperature | Jurnal Kimia Sains dan Aplikasi  ISSN: 1410-8917  e-ISSN: 2597-9914 | 21 (4) : 171-174  ejournal.undip.ac.id/index.php/ksa/article/view/19751/pdf |

**Publikasi Artikel Ilmiah Jurnal Internasional dalam 10 Tahun Terakhir**

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| --- | --- | --- | --- | --- |
| No. | Tahun | Judul Artikel Ilmiah | Nama Jurnal | Vol./ No./ Hal. |
| 1 | 2016 | Structural evolution of nickel oxide silica sol-gel for the preparation of  interlayer-free membranes | Journal of Non-Crystalline Solids | 447 (2016) 9-15 http://dx.doi.org/10.1016/j.jnoncrysol.2016.05.031 |
| 2 | 2017 | The Influence of Precipitating Agents on The Morphological and Photocatalytic Properties of Bismuth Oxide | Advanced Science Letter  (EISSN: 1936-7317 (Online), 2017 – | 23 (7), 2017, pp. 6521-6523 |
| 3 | 2017 | Nano-zeolite Modification using Cetylpiridinium Bromide for the Removal of Remazol Black B and Remazol Yellow G Dyes | Advanced Science Letter  (EISSN: 1936-7317 (Online), 2017 | 23 (7), 2017, pp. 6502-6505  <https://www.ingentaconnect.com/content/asp/asl/2017/00000023/00000007/art00112> |
| 4 | 2017 | Studying Impact of Different Precipitating Agents on Crystal Structure, Morphology, and Photocatalytic Activity of Bismuth Oxide | Bulletin of Chemical Reaction Engineering & Catalysis | 12 (3), 2017, pp. 478-484 |
| 5 | 2018 | Hydrophobicity of silica thin films: The deconvolution and interpretation by Fourier-transform infrared spectroscopy | Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy | **199** (2018) 12-20  ISSN: 1386-1425  <https://www.ncbi.nlm.nih.gov/pubmed/29562210> |
| 6 | 2018 | [Systematic study of electronic properties of Fe-doped TiO2 nanoparticles by X-ray photoemission spectroscopy](https://link.springer.com/article/10.1007/s10854-018-9911-5) | Journal of Materials Science: Materials in Electronics  ISSN: 0957-4522 (Print) 1573-482X | 29(20), pp.17956-17966  <https://link.springer.com/article/10.1007/s10854-018-9911-5> |
| 7 | 2019 | Synthesis, characterization and selectivity of molecularly imprinted polymer (MIP) glucose using polyeugenol as a functional polymer | Rasayan Journal of Chemistry,  ISSN: 0974-1496  e-ISSN: 0976-0083 | 12(2), 809-821  <https://rasayanjournal.co.in/admin/php/upload/649_pdf.pdf> |
| 8 | 2019 | Studying impact of citric acid-bismuth nitrate pentahydrate ratio on photocatalytic activity of bismuth oxide prepared by solution combustion method | Rasayan J. Chem  ISSN: 0974-1496  e-ISSN: 0976-0083 | **12** (4): 2210-2217  <https://rasayanjournal.co.in/admin/php/upload/649_pdf.pdf> |
| 9 | 2020 | Hydrazine and Urea Fueled-Solution Combustion Method for Bi2O3 Synthesis: Characterization of Physicochemical Properties and Photocatalytic Activity | Bulletin of Chemical Reaction Engineering & Catalysis  ISSN: 09741496 | <https://ejournal2.undip.ac.id/index.php/bcrec/article/view/5483> |
| 10 | 2020 | Effect of Fuels on the Physicochemical Properties and Photocatalytic Activity of Bismuth Oxide, Synthesized using Solution Combustion Method | [International Journal of Technology](https://www.researchgate.net/journal/2086-9614_International_Journal_of_Technology)  p-ISSN : 2086-9614  e-ISSN : 2087-2100 | Volume 11 No. 1: pp. 26 -36  <http://ijtech.eng.ui.ac.id/article/view/3342> |
| 11 | 2020 | The Role of H2C2O4 and Na2CO3 as Precipitating Agents on The Physichochemical Properties and Photocatalytic Activity of Bismuth Oxide | Open Chemistry  ISSN 2391-5420 | volume 18 no 1: pp. 129-137  <https://www.degruyter.com/view/journals/chem/18/1/article-p129.xml> |
| 12 | 2020 | [Structural, thermal and surface properties of sticky hydrophobic silica films: Effect of hydrophilic and hydrophobic precursor compositions](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85092377997&origin=resultslist&sort=plf-f) | [Chemical Physics Letters](https://www-scopus-com.proxy.undip.ac.id/sourceid/26586?origin=resultslist)  ISSN : 0009-2614 | 2020, 761, 138076  <https://doi.org/10.1016/j.cplett.2020.138076> |
| 13 | 2021 | Physicochemical and photocatalytic activity of bismuth oxide affected by weak and strong bases precipitants | [Songklanakarin Journal of Science and Technology](https://www-scopus-com.proxy.undip.ac.id/sourceid/3900148502?origin=resultslist)  **ISSN**: 0125-3395  ISSN online 2408-1779 | 2021, 43(3), pp. 608–614  https://rdo.psu.ac.th/sjstweb/journal/43-3/2.pdf |
| 14 | 2021 | Bismuth Oxide Prepared by Sol-Gel Method: Variation of Physicochemical Characteristics and Photocatalytic Activity Due to Difference in Calcination Temperature | Indonesian Journal of Chemistry  ISSN 1411-9420 | Vol 21. No. 1 p. 108-117  <https://doi.org/10.22146/ijc.53144> |
| 15 | 2021 | [LiOH/coconut shell activated carbon ratio effect on the conductivity of lithium ion battery anode active material](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85119340925&origin=resultslist&sort=plf-f) | [Molekul](https://www-scopus-com.proxy.undip.ac.id/sourceid/21100926576?origin=resultslist)  **ISSN** online 2503-0310 | 2021, 16(3), pp. 233–241  <http://dx.doi.org/10.20884/1.jm.2021.16.3.805> |
| 16 | 2021 | [Modification of the glass surface with hydrophobic silica thin layers using tetraethylorthosilicate (TEOS) and trimethylchlorosilane (TMCS) precursors](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85096687448&origin=resultslist&sort=plf-f) | [Surface and Interface Analysis](https://www-scopus-com.proxy.undip.ac.id/sourceid/24511?origin=resultslist)  Online ISSN:1096-9918 | 2021, 53(3), pp. 305–313  <https://doi.org/10.1002/sia.6917> |
| 17 | 2021 | Hydrophobic Silica Thin Film derived from Dimethyldimethoxysilane-Tetraethylorthosilicate for Desalination | [Thin Solid Films](https://www-scopus-com.proxy.undip.ac.id/sourceid/12347?origin=resultslist" \o "Show document details)  ISSN 0040-6090 | 2021, 734, 138865  [https://doi.org/10.1016/j.tsf.2021.138865](https://doi.org/10.1016/j.tsf.2021.138865" \t "_blank" \o "Persistent link using digital object identifier) |
| 18 | 2021 | [Glycine-fueled solution combustion synthesis: Photocatalytic activity of bismuth oxide on the degradation of organic dye molecules in relation to differences in fuel-oxidant ratio](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85119990798&origin=resultslist&sort=plf-f) | [Desalination and Water Treatment](https://www-scopus-com.proxy.undip.ac.id/sourceid/19700175585?origin=resultslist),  ISSN (Online): 1944-3986  ISSN: 1944-3994 | 2021, 236, pp. 338–347 |
| 19 | 2022 | French Fries-Like Bismuth Oxide: Physicochemical Properties, Electrical Conductivity and Photocatalytic Activity | [Bulletin of Chemical Reaction Engineering &amp; Catalysis](https://www-scopus-com.proxy.undip.ac.id/sourceid/19900191860?origin=resultslist" \o "Show document details),  **ISSN**: 1978-2993 | 2022, 17(1), pp. 146–156  <https://doi.org/10.9767/bcrec.17.1.12554.146-156> |
| 20 | 2022 | Pervaporation membrane for desalination derived from tetraethylorthosilicate-methyltriethoxysilane | [Journal of Sol-Gel Science and Technology](https://www-scopus-com.proxy.undip.ac.id/sourceid/21188?origin=resultslist" \o "Show document details), 2022  ISSN (Online): 1573-4846  ISSN: 0928-0707 | 101 (3): 505-518. |
| 21 | 2022 | Enhancement of Electrical Conductivity of Bismuth Oxide/Activated Carbon Composite | Scientia Iranica,  ISSN: 1026-3098 | 2022, 29(6), pp.3119-3131. |
| 22 | 2022 | [Synthesis and characterization of bismuth oxide/commercial activated carbon composite for battery anode](https://www.degruyter.com/document/doi/10.1515/chem-2022-0247/html) | Open Chemistry  ISSN 2391-5420 | 2022, 20(1), pp.1476-1484. |
| 23 | 2023 | Nitrogen-doped carbon quantum dots supported zinc oxide (ZnO/N-CQD) nanoflower photocatalyst for methylene blue photodegradation | Results in Engineering,  ISSN 25901230 | 2023, 17, p.100814. |
| 24 | 2023 | Effect of LiTFSI electrolyte salt composition on characteristics of PVDF-PEO-LiTFSI-based solid polymer electrolyte (SPE) for lithium-ion battery | Molekul,  ISSN 19079761, 25030310 | *18 (2023), p. 98-106* |
| 25 | 2023 | Synthesis of graphene-like material derived from biomass from agricultural waste and its application in Cu (II) removal. | Korean Journal of Chemical Engineering, 40(4), pp.964-974. |  |
| 26 | 2023 | Electrochemical Performance of One-Pot Hydrothermal-Derived Bismuth Oxide/Commercial Activated Carbon/Graphite Composite | Materials Science and Technology,  2023  ISSN: 02670836, 17432847 | (2023),p. 1-14 |
| 27 | 2023 | Synthesis, Characterization, and Antibacterial Activity Test of Geothermal Silica/AgNO3 Thin Film | Molekul, 2023, 18(2), pp.186-199. |  |
| 28 | 2023 | Bismuth sulfide/coconut fiber based-activated carbon composite: synthesis, characterization, and electrochemical performance | Emergent Materials, 2023, 6(4), pp.1193-1205 |  |
| 29 | 2023 | Hydrazine-Fueled Solution Combustion Method: Fuel/Oxidizer Ratio Effects on Photocatalytic Performance of Bismuth Oxide | Bulletin of Chemical Reaction Engineering & Catalysis, 2023, 18(3), pp.539-547. |  |
| 30 | 2023 | Improving the Electrical Conductivity of the Composite Comprising Bismuth Oxide, Activated Carbon, and Graphite for Use as a Battery Anode. | Indonesian Journal of Chemistry, 23(6), pp. 1479-1489 |  |
| 31 | 2023 | Temperature impact on the morphological evolution of nitrogen-doped carbon quantum dot-decorated zinc oxide and its influence on highly efficient visible-light photocatalyst | Physica B: Condensed Matter, 669, p.415293 |  |
| 32 | 2023 | Efficient degradation of pharmaceutical drugs using cerium-doped zinc oxide nanophotocatalysts synthesized via the sono-precipitation route | Nanotechnology for Environmental Engineering, 8(4), pp.899-909. |  |
| 33 | 2023 | Synthesis of ZnO-Cdots nanoflower by hydrothermal method for antibacterial agent and dye photodegradation catalyst | Results in Materials, 2023, 20, p.100491 |  |
| 34 | 2024 | Hybrid Fenton-electrochemical reactor and system as post-treatment of textile wastewater. | Journal of Water Process Engineering, 59, p.105028. |  |
| 35 | 2024 | Sucrose-derived carbon membranes for sustainable water desalination. | Journal of Coatings Technology and Research, pp.1-13. |  |
| 36 | 2024 | Green synthesis of ZnO photocatalyst composited carbon quantum dots (CQDs) from lime (Citrus aurantifolia). | Catalysis Communications, p.106888. |  |
| 37 | 2024 | Physical, Chemical and Electrical Conductivity Properties of Bismuth Oxide/Rice Husk-Based Activated Carbon/Graphite Composite Prepared by the Hydrothermal Method | International Journal of Technology  p-ISSN : 2086-9614  e-ISSN : 2087-2100  International Journal of Technology, 15(4). | (2024), p. 987-998 |
| 38 | 2024 | Effect of Solvothermal Time to Characteristics and Performance of Photocatalyst Bismuth‐Rich Oxyiodide for Dye Decolorization. | ChemistrySelect, 9(28), p.e202304951. |  |
| 39 | 2024 | Robust Construction of Polyvinyl Alcohol Intercalated Graphene Oxide Nanofiltration Membrane for Desalination Via Pervaporation. | Chemosphere, p.142437. |  |

**Pemakalah Seminar Ilmiah (*Oral Presentation*) dalam 10 Tahun Terakhir**

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| --- | --- | --- | --- |
| No. | Nama Pertemuan Ilmiah / Seminar | Judul Artikel Ilmiah | Tempat dan Waktu |
| 1. | Durham-Saudi Arabi workshop on Nanoscience and Nanotechnology | Detonation nanodiamonds: uncomplicated procedure for de-agglomeration and size selection | 8th-9th February 2011, Durham University, UK |
| 2. | nanoLAB lunch meeting 17th March 2011 (*invited presentator*) | De-agglomeration and evaporation of detonation nanodiamonds | 17th March 2011, Newcastle University, UK |
| 3. | International Conference on Nanotechnology 2012 Faculty of Industrial Sciences and Technology | Functionalized Nanodiamonds: Raman and Spectroscopy Studies | May 30th - June 1st, 2012, University of Pahang, Malaysia |
| 4. | The 24th Conference of the European Physical Society Condensed Matter Division, 11th European Conference on Surface Crystallography and Dynamics, 29th European Conference on Surface Science, and 2012UK Condensed Matter and Materials Physics Conference | The optical properties of undecyl-nanodiamond | 3th-7th September 2012, Edinburgh, UK |
| 5. | 2nd International Conference on Chemical and Material Engineering 2015 | Synthesis of Sodium Lauryl Sulphate (SLS)-Modified Activated Carbon from Risk Husk for Waste Lead (Pb) Removal | 29th-30th September 2015, Semarang, Indonesia |
| 6. | 5th International seminar on new paradigm and innovation on natural sciences and its application (ISNPINSA) | Surface modification of nanodiamond and its interaction to the doxorubicin | 7th – 8th October 2015, Semarang, Indonesia |
| 7 | 11th Joint Conference on Chemistry (JCC) | Enrichment of Nanodiamond Surfaces with Carboxyl Groups for Doxorubicin Loading and Release | 15-16 September 2016, Purwokerto, Indonesia |
| 8 | 6th International seminar on new paradigm and innovation on natural sciences and its application (ISNPINSA) | * The Modification of Rice Husk-Based Active Carbon Using Anionic and Cationic Surfactants * Synthesis of Bismuth Oxide using Precipitation Method and Its Photocatalytic Activity for Methyl Orange Degradation | 6th-7th October 2016, Semarang, Indonesia |
| 9 | 7th International seminar on new paradigm and innovation on natural sciences and its application (ISNPINSA) | Synthesis and characterisation of bismuth oxide using sol gel method and its photocatalytic activity test | 17th October 2017, Semarang, Indonesia |
| 10 | The 2nd International Conference on Chemistry, Chemical Process and Engineering (IC3PE) | The role of precipitating agents on the formation of bismuth oxide (Bi2O3) as photocatalyst | 14th August 2018, Yogyakarta, Indonesia |
| 11 | The 13th Joint Conference on Chemistry  (*Invited speaker*) | Effect of urea, citric acid, and glycine on the physicochemical properties and photocatalytic activity of bismuth oxide synthesized using the solution combustion method | 7-8 september 2018, Semarang, Indonesia |
| 12 | The 14th Joint Conference on Chemistry | Synthesis and characterisation of bismuth oxide using sol-gel method with variation of calcination temperature and its photocatalytic activity test | 10-11 September 2019, Surakarta, Central Java, Indonesia |
| 13 | The 4th International Conference on Chemical and Material Engineering (ICCME) Semarang | Physicochemical characteristics and electrical conductivity ofbismuth oxide/activated carbon composite | 10 June 2020,  Semarang,  Central Java, Indonesia |
| 14 | The 16th Joint Conference on Chemistry | 1. Synthesis and Characterisation of bismuth oxide/rice husk activated carbon composites for battery annodes 2. Effect of calcination temperature on the morphology and photocatalytic activity of bismuth oxide | 09 September 2021, Purwokerto Central Java, Indonesia |
| 15 | 11th International Seminar on New Paradigm and Innovation on Natural Sciences and its Application (ISNPINSA) | Effect of hydrothermal time variation on the characteristics and photocatalytic activity of bismuth oxide | 15 Oktober 2021, Semarang,  Central Java, Indonesia |
| 16 | Seminar Nasional Kimia 2022 “Peranan Kimiawan dalam Pengembangan Sumber Daya Alam Sebagai Penunjang Ibu Kota Negara Baru”  (*invited speaker*) | Fotokatalis bismut oksida: sintesis, karakterisasi dan aplikasi | 18 Juli 2022,  Samarinda East Kalimantan, Indonesa |
| 17 | 12th International Seminar on New Paradigm and Innovation on Natural Sciences and its Application (ISNPINSA) | Synthesis and characterization of bismuth oxide/commercial activated carbon/graphite composites as battery anodes | 19 Oktober 2022, Semarang,  Central Java, Indonesia |
| ***Poster Seminar*** | | | |
| No | Nama pertemuan ilmiah/seminar | Judul presentasi | Waktu dan tempat |
| 1. | Electron Microscopy Characterisation in Physical and Biological Science | Separation and evaporation of detonation nanodiamonds | 05th – 06th July 2010, Durham University, UK |
| 2. | Poster seminar competition organised by NanoLab | De-agglomeration and evaporation of detonation nanodiamonds | January 19th, 2011 in Newcastle University, UK |
| 3. | 18th Interdisciplinary Surface Science Conference (ISSC-18) | De-agglomeration and evaporation of detonation nanodiamonds | 4th – 5th April 2011, The University of Warwick, UK |
| 4. | Poster competition-industrial advisory board | Functionalized Nanodiamonds: Raman and Spectroscopy Studies | 1st December 2011, Newcastle University, UK |
| 5. | The second RSC Chemical Nanoscience Spring Symposium | Raman and photoluminescence spectroscopy studies of functionalised nanodiamond | March 14th 2012, Newcastle University, UK |
| 5. | 2013 JSAP-MRS Joint Symposia, Symposium N: Nanodiamond-from basics to medical and other potential applications | De-agglomeration and functionalisation of diamond from nano- to micro- sizes using 1-undecene. | 16th-20th September 2013, Kyoto, Japan |
| 6. | 9th Joint Conference on Chemistry, *Green Chemistry*, an International conference organised by 4 universities in Central Java, Indonesia | De-agglomeration of nanodiamonds and their optical properties | 12th-13th November 2014, Semarang, Indonesia |
| 7. | 10th Joint Conference on Chemistry, , an International conference organised by 4 universities in Central Java, Indonesia | Synthesis of α-Bismuth Oxide using Solution Combustion Method and Its Photocatalytic Properties | 8th-9th September 2015, Surakarta, Indonesia |
| 8 | 11th Joint Conference on Chemistry, *Green Chemistry*, an International conference organised by 4 universities in Central Java, Indonesia | The Influence of Activating Agents on the Performance of Rice Husk-Based Carbon for Sodium Lauryl Sulfate and Chrome (Cr) Metal Adsorptions | 6th-7th Oktober 2016, Semarang, Indonesia |
| 9 | Material Research Society Indonesia Conference and Congress 2017 | Modification of rice-husk based activated carbon using anionic and cationic surfactants | 8th-12th October 2017, Yogyakarta, Indonesia |
| 10 | The 13th Joint Conference on Chemistry | Studying impact of citric acid-bismuth nitrate pentahydrate ratio on photocatalytic activity of bismuth oxide synthesized using solution combustion method | 7-8 september 2018, Semarang, Indonesia |
| 11 | The 13th Joint Conference on Chemistry | Synthesis of actived carbon/bismuth oxide composite and  its characterization for battery electrode | 7-8 september 2018, Semarang |
| 12 | The 2nd International Conference on Chemistry and Material Science (IC2MS) | Kinetics study of photocatalytic activity of bismuth oxide prepared by different methods on methyl orange degradation | 2-3 November 2019, Malang, East Java, Indonesia |

**Karya Buku dalam 10 Tahun Terakhir**

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| No. | Tahun | Judul Buku | ISBN | Penerbit |
| 1. | 2019 | Kimia koloid dan permukaan | 9786232098602 | Deepublish |
| 2. | 2021 | Konversi limbah pertanian menjadi karbon aktif dan aplikasinya | 9786230237829 | Deepublish |
| 3. | 2022 | Fotokatalis bismut oksida: sintesis, karakterisasi dan aplikasi | 9786230244155 | Deepublish |
| 4. | 2023 | Fotokatalis bismut oksida: preparasi, karakteristik dan aktivitas fotokatalitik | 9786230273964 | Deepublish |

**Perolehan HKI dalam 10 Tahun Terakhir**

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| No. | Tahun | Judul/ Tema HKI | Jenis | Nomor P/ ID |
| 1. | 2022 | Iklan produk D’biscu | Film iklan | EC002022102755 |
| 2. | 2022 | Iklan manfaat produk D’biscu bagi ibu hamil | Film iklan | EC002022104207 |
| 3. | 2022 | Iklan edukasi gizi D’biscu untuk ibu hamil | Film iklan | EC002022104208 |
| 4. | 2023 | Pembuatan kerajinan tas dari plastik bekas kemasan produk rumah tangga | Karya rekaman video | EC00202329614 |
| 5. | 2023 | Pemanfaatan sampah organik rumah tangga menjadi produk eco  Enzyme dalam rangka menuju zero waste untuk mendukung  SDGS 13: penanganan perubahan iklim | Karya rekaman video | EC00202383899 |
| 6. | 2023 | Metode pembuatan nanopigmen anorganik ramah lingkungan | Paten sederhana | S00202302796 (granted ) |
| 7. | 2024 | Alat hidrotermal berskala laboratorium yang  disempurnakan | Paten sederhana | S000009076 (granted) |

**Keanggotaan dalam Organisasi Profesi**

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| --- | --- | --- | --- | --- |
| No. | Tahun | Nama Organisasi | Nasional/Regional/Internasional | Status Keanggotaan (Kedudukan) |
| 1. | 2021-2024 | Himpunan Kimia Indonesia | Regional | Bendahara |
| 2. | 2018-2026 | Himpunan Kimia Indonesia | Nasional | Anggota |

**Penghargaaan yang pernah diterima (pemerintah, Asosiasi, Industri, Institusi Lainnya)**

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| --- | --- | --- | --- |
| No. | Tahun | Jenis Penghargaan | Institusi Pemberi |
| 1. | 2011 | Award for the best poster in nanoLAB poster competition | Newcastle University, UK |
| 2. | 2012 | Runner up for Postgraduate Research Proposal Competition | Newcastle University, UK |
| 3. | 2017 | Postdoctoral / sabbatical program ke Hiroshima University, Japan | Diponegoro University, Indonesia |
| 4. | 2022 | Top cited paper in 2020-2021 dengan judul artikel “[Modification of the glass surface with hydrophobic silica thin layers using tetraethylorthosilicate (TEOS) and trimethylchlorosilane (TMCS) precursors](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85096687448&origin=resultslist&sort=plf-f)” in “Surface and Interface Analysis” journal | Wiley |
| 5. | 2022 | Top cited article 2021-2022 dengan judul “The role of H2C2O4 and Na2CO3 as precipitating agents on the physicochemical properties and photocatalytic activity of bismuth oxide” in “Open Chemistry” journal | De Gruyter |
| 6. | 2022 | Postdoctoral / sabbatical program ke University of Auckland, New Zealand | Diponegoro University, Indonesia |
| 7. | 2023 | Top cited paper in 2021-2022 dengan judul artikel “[Modification of the glass surface with hydrophobic silica thin layers using tetraethylorthosilicate (TEOS) and trimethylchlorosilane (TMCS) precursors](https://www-scopus-com.proxy.undip.ac.id/record/display.uri?eid=2-s2.0-85096687448&origin=resultslist&sort=plf-f)” in “Surface and Interface Analysis” journal | Wiley |
| 8. | 2023 | Postdoctoral/sabbatical program ke Hiroshima University, Japan | Diponegoro University, Indonesia |
| 9. | 2024 | Satyalencana Karya Satya X Tahun | Presiden RI |

Semua data yang saya isikan dan tercantum dalam biodata ini adalah benar dan dapat dipertanggungjawabkan secara hukum. Apabila di kemudian hari ternyata dijumpai ketidaksesuaian dengan kenyataan, saya sanggup menerima sanksi.

Demikian biodata ini saya buat dengan sebenarnya untuk memenuhi salah satu persyaratan dalam pengajuan Hibah Penelitian “…..……..”

Semarang, 2025

Ketua Tim Peneliti

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| --- | --- |
|  | Yayuk Astuti, Ph.D  NIP: 198209182006042001 |