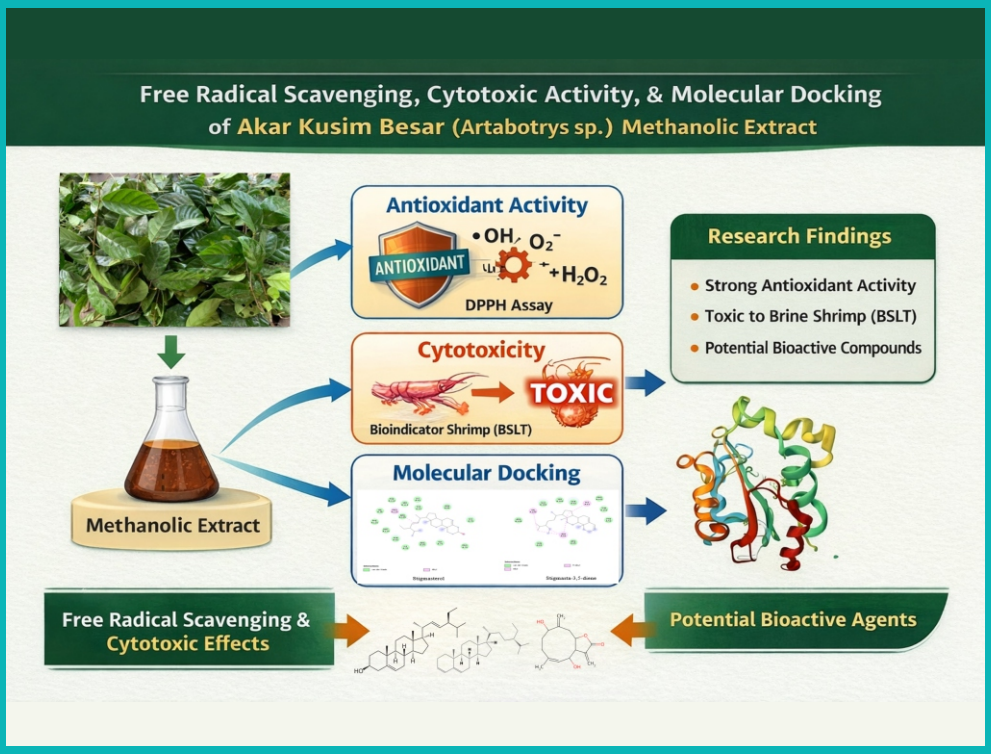
ALCHEMY

ALCHEMY
Jurnal Penelitian Kimia

ALCHEMY J. Pen. Kim Vol.22 No. 1 March 2026



ACCREDITED SINTA 2
KEMENDIKBUDRISTEK SK No. 105/E/KPT/2022

Website: https://jurnal.uns.ac.id/alchemy
E-mail : alchemy@mipa.uns.ac.id

pISSN 1412 4092
eISSN 2443 4183

PUBLISHED BY
SEBELAS MARET UNIVERSITY
Jl. Ir. Sutami 36A, Surakarta, 57126
INDONESIA

Publisher Address
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
Sebelas Maret University (UNS), Jl. Ir. Sutami 36A, Surakarta, 57126, INDONESIA
Email : alchemy@mipa.uns.ac.id;
alchemymipauns@gmail.com
Website : https://jurnal.uns.ac.id/alchemy/

INDEXED IN

PREFACE

The March issue of ALCHEMY Jurnal Penelitian Kimia 22 (1) 2026 presents twenty-two original contributions that collectively illustrate the evolving landscape of chemical sciences and their allied fields. This edition underscores the journal's dedication to disseminating high-quality, peer-reviewed research while fostering interdisciplinary perspectives that connect fundamental inquiry with practical application.

The articles featured span diverse domains. Several works emphasize the potential of natural compounds, including studies on phloroglucinol derivatives, Indonesian herbal essential oils, Moringa leaf bioactives, and *Artabotrys sp.* extracts, underscoring the continued relevance of phytochemistry in antibacterial, antioxidant, and anticancer research. Complementary research on chroman derivatives, silver nanoparticles synthesized with Kitolod extract, and Dadap leaf phytochemistry further demonstrates the promise of plant-based resources in pharmaceutical innovation.

Advances in materials science and sustainability are equally prominent. Contributions on biopolymer composite membranes for lithium-ion batteries, hydrogels derived from carrageenan-chitosan, and bioplastics from sago liquid waste showcase chemistry's role in enabling eco-friendly technologies. Studies on coal fly ash-based geopolymers, zeolite-supported syntheses, and cellulose biocoagulants from jengkol peel exemplify the transformative potential of applied chemistry in environmental remediation and resource recovery.

Methodological rigor is reflected in works that employ FTIR, NMR, and HPLC analyses, as well as in optimization frameworks such as central composite design. Computational approaches, including DFT studies of Cu(II) complexes and molecular docking analyses of antioxidant compounds, illustrate the integration of theoretical and experimental paradigms that characterize contemporary chemical research. Collectively, these contributions articulate a coherent narrative of scientific progress, one that enriches disciplinary knowledge, advances sustainable development, and supports innovations in public health and technology.

On behalf of the editorial board, we extend our sincere gratitude to all authors for their commitment to advancing scientific inquiry and to the reviewers whose critical assessments and constructive feedback have ensured the scholarly integrity of this issue. Their collective efforts exemplify the collaborative ethos that sustains the advancement of science and strengthens the global research community.

Best regards,
Editorial Team
ALCHEMY: Jurnal Penelitian Kimia

TABLE OF CONTENTS

ALCHEMY Jurnal Penelitian Kimia Vol. 22 No. 1 March 2026

Review Articles

Research Articles

ACKNOWLEDGMENT FOR THE REVIEWERS AND PARTNERS OF ALCHEMY Jurnal Penelitian Kimia Vol 22(1) March 2026

ChM. Dr. Sabrina Soloi
Faculty of Science and Natural Resources, Malaysia Sabah University, Malaysia

Dr. rer. nat. Rujito Sesariojiwandono Ridho Suharbiansah S.Si., M.Si.
Institute of Chemical Technology, Universität Leipzig, Germany

Prof. Ismiyarto, S.Si, M.Si, Ph.D.
Department of Chemistry, Faculty of Science and Mathematics, Diponegoro University

Dr. Khairul Anam, M.Si.
Department of Chemistry, Faculty of Science and Mathematics, Diponegoro University

Prof. Drs. Dwi Siswanta, M.Eng., Ph.D.
Department of Chemistry, Faculty of Mathematics and Natural Science,
Gadjah Mada University

Dr. rer. nat. Adhitasari Suratman, S.Si, M.Si.
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
Universitas Gadjah Mada

Dyah Utami Cahyaning Rahayu, S.Si., M.Si.
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
University of Indonesia

Dr. Hartiwi Diastuti, S.Si., M.Si.
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
Jenderal Soedirman University

Dr. Santi Nur Handayani, S.Si., M.Si.
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
Jenderal Soedirman University

Prof. Dr. Deswati, M.S.
Department of Chemistry, Faculty of Mathematics and Natural Sciences, Andalas University

Prof. Dr. Is Fatimah, M.Si.
Department of Chemistry, Faculty of Mathematics and Natural Sciences,
Islam Indonesia University

Dr. apt. Ni Putu Eka Leliqia, S.Farm., M.Si.
Department of Pharmacy, Faculty of Mathematics and Natural Sciences, Udayana University

Dr. Widiastuti Agustina Eko Setyowati S.Si., M.Si.
Department of Chemistry Education, Faculty of Education and Teacher Training,
Sebelas Maret University

Dr.rer.nat. Wirawan Ciptonugroho
Department of Chemistry Education, Faculty of Education and Teacher Training,
Sebelas Maret University

Dr. Ir. Joko Waluyo, S.T., M.T.
Department of Chemical Engineering, Faculty of Engineering, Sebelas Maret University

Ir. Anatta Wahyu Budiman, S.T., Ph.D.
Department of Chemical Engineering, Faculty of Engineering, Sebelas Maret University

Dr. Ir. Ari Diana Susanti, S.T., M.T.
Department of Chemical Engineering, Faculty of Engineering, Sebelas Maret University