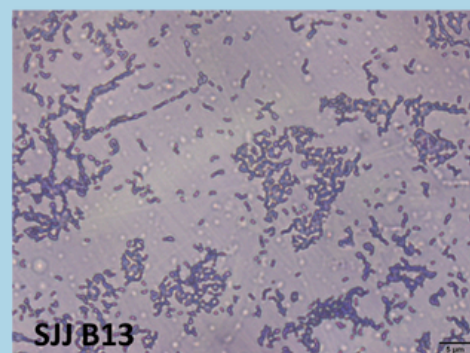
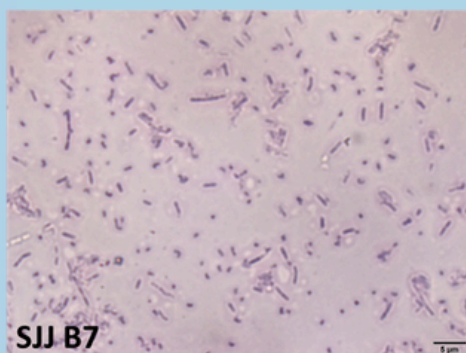
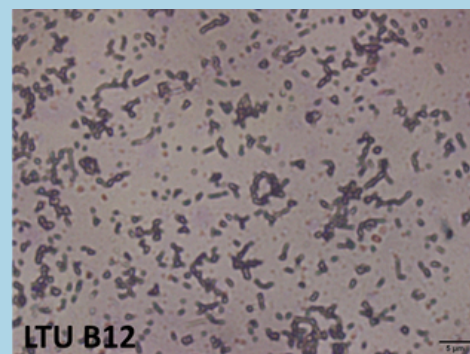
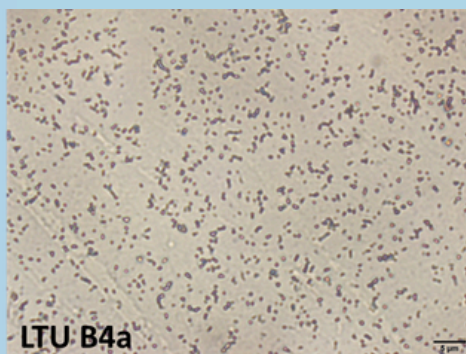


ISSN (print) : 1978-628X
ISSN (online) : 2476-8960

Volume 16, Number 2
September 2025

Jurnal

Riset Kimia



Preface

In this edition, we present some developments in chemistry, materials science, and biotechnology. The topics range from designing new devices such as portable air purifiers and solar cells, to explore natural resources for sustainable applications in energy, environment, and health. Several studies focus on natural products, including probiotics from traditional *dadih*, plant extracts with antioxidant or anticancer potential, and methods to ensure the purity of herbal and essential oils. Others highlight innovations in corrosion protection, composite materials, and advanced analytical techniques like FTIR, UV-Vis, and chemometrics. Overall, these contributions show how scientific research can connect fundamental studies with practical solutions for technology, sustainability, and human well-being.

Together, these articles not only advance our understanding of their respective fields but also exemplify the crucial interplay between science and sustainability. As we continue to navigate the complexities of modern research, the contributions of these authors provide hope and direction for future innovations that benefit both society and the environment.

I would like to thank all the authors, reviewers, and editorial team who have contributed to the publication of this edition. This collaborative effort reflects our commitment to improving the quality of research and publications in chemistry. May the Jurnal Riset Kimia continue to be a useful and inspiring platform, encouraging continuous knowledge exchange and innovation within the scientific community.

Padang, September 30, 2025

Editor in Chief

Jurnal Riset Kimia

Dr. rer. nat. Syafrizayanti

Department of Chemistry

Faculty of Mathematics and Natural Sciences

Universitas Andalas

EDITORIAL TEAM**Editor in Chief**

Dr. rer. nat. Syafrizayanti [Scopus ID: 56017949100], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Managing Editor

Prima Fitria Hillman, Ph.D [Scopus ID: 57193996916], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Firda Furqani, Ph.D, Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Editorial Board

Prof. Dr. Sang-Jip Nam [Scopus ID: 57208839798], Department of Chemistry and Nanoscience, College of Natural Sciences, Ewha Womans University, Seodaemun-gu, Seoul 120-750, South Korea

Sri Ayu Anggraini, Ph.D [Scopus ID: 37111907400], Sensing System Research Center, National Institute of Advanced Industrial Science and Technology (AIST), 807-1, Shuku-machi, Tosu, Saga, 841-0052, Japan

Dr. Guntur Fibriansah [Scopus ID: 13611440500], Programme in Emerging Infectious Diseases, Duke-National University of Singapore Medical School, Singapore 169857, Singapore - Centre for BioImaging Sciences, Department of Biological Sciences, National University of Singapore, Singapore 117557, Singapore

Dr. Mohammad Mansoob Khan [Scopus ID: 55226652100], Chemical Sciences, Faculty of Science, Universiti Brunei Darussalam, Jalan Tungku Link, Gadong, BE 1410, Brunei Darussalam

Prof. Dr. Mai Efdi [Scopus ID: 14010715600], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Dr. Diana Vanda Wellia [Scopus ID: 35363286300], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Dr. Eng. Yulia Eka Putri [Scopus ID: 55261197300], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Ananda Putra, Ph.D [Scopus ID: 14919803200], Department of Chemistry, Faculty of Mathematics and Science, Universitas Negeri Padang, Padang, West Sumatra 25171, Indonesia

Prof. Dr. Enos Tangke Arung [Scopus ID: 8870186900], Faculty of Forestry, Universitas Mulawarman, Samarinda, East Kalimantan 75119, Indonesia

Dr. Muhamad Ikhlasul Amal [Scopus ID: 55351328000], Indonesian Institute of Sciences (LIPI), South Tangerang, Banten 15314, Indonesia

Peer Reviewer

Dr. Ir. Kiagus Ahmad Roni [Scopus ID: 57208131099], Department of Chemical Engineering, Faculty of Engineering, Universitas Muhammadiyah Palembang, South Sumatra, Indonesia

Taufik Abdillah Natsir, Ph.D [Scopus ID: 56426349400], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Gadjah Mada, Yogyakarta, Indonesia

Dr.Eng. Gerald Ensang Timuda [Scopus ID: 57201798377], Research Center for Advanced Materials, National Research and Innovation Agency (BRIN), Indonesia

Dr. Yuly Kusumawati [Scopus ID: 56165297400], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Institut Teknologi Sepuluh Nopember, Surabaya, East Java, Indonesia

Dr. Rahmad Nuryanto [Scopus ID: 57189070167], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Diponegoro, Semarang, Indonesia

Khurnia Krisna Puji Pamungkas, Ph.D [Scopus ID: 57209975402], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Gadjah Mada, Yogyakarta, Indonesia

Prof. Dr. Afrizal [Scopus ID: 36482708900], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, Padang, West Sumatra, Indonesia

Muhammad Bahi, Ph.D [Scopus ID: 57204475149], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Syiah Kuala, Banda Aceh, Indonesia

Eun-Young Lee, Ph.D [Scopus ID: 57219618296], Department of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Republic of Korea

Chaeyoung Lee, Ph.D, Department of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Republic of Korea

Yolani Syaputri, Ph.D [Scopus ID: 57205441626], Department of Biology, Faculty of Mathematics and Natural Sciences, University of Padjadjaran, West Java, Indonesia

Prof. Dr. Sri Handayani [Scopus ID: 6506967441], Departement of Chemistry Education, Faculty of Mathematics and Natural Sciences, Universitas Negeri Yogyakarta

Dr. Eng. Gadang Priyotomo [Scopus ID: 37073272700], Research Center for Metallurgy and Material, National Research and Innovation Agency (BRIN), Indonesia

Prof. Dr. Arif Hidayat, M.Si [Scopus ID: 7006069131], Departement of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Malang

Riezqa Andika, Ph.D [Scopus ID: 56197952200], Department of Chemical Engineering, Faculty of Engineering, Universitas Indonesia, Indonesia

Mia Ledyastuti, PhD [Scopus ID: 12798660600], Departement of Chemistry, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung, Indonesia

Dr. Ilona Bella [Scopus ID: 57220089711], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, Padang, West Sumatra, Indonesia

Prof. Dr. Mohamad Rafi [Scopus ID: 57216752430], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Institut Pertanian Bogor, Darmaga 16680, Bogor

Prof. Dr. Venty Suryati [Scopus ID: 7801675009], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Sebelas Maret, Surakarta, Central Java, Indonesia

Ayu Rahayu Anggraeni, Ph.D [Scopus ID: 57094041700], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Padjadjaran, West Java, Indonesia

Aep Patah, Ph.D [Scopus ID: 23470634000], Departement of Chemistry, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung, Indonesia

Aster Rahayu, Ph.D [Scopus ID: 56431029100], Departement of Chemical Engineering, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

Erda Rahmilaila Desfitri, ST., M.Eng., Ph.D [Scopus ID: 57204576244], Renewable Energy Engineering Technology, Faculty of Industrial Technology, University of Bung Hatta, Padang, West Sumatera, Indonesia

Prof. Dr. Safni [Scopus ID: 57219016734], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, Padang, West Sumatra, Indonesia

Dr. Ni Luh Gede Ratna Juliasih M.Si [Scopus ID: 56826049800], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Lampung, Indonesia

Dr. Yefrida [Scopus ID: 57191636458], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, Padang, West Sumatra, Indonesia

Prof. Dr. Roza Linda [Scopus ID: 55671647400], Department of Chemistry Education, Faculty of Education, University of Riau, Indonesia

Dr. Tio Putra Wendari [Scopus ID: 57208920083], Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, Padang, West Sumatra, Indonesia

Sri Sugiarti, Ph.D [Scopus ID: 12783429100], Department of Chemistry, Faculty of Mathematics and Natural Sciences, Institut Pertanian Bogor, Darmaga 16680, Bogor

Supporting Staff

Prof. Dr. Suryati, Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

Atika Syafawi, S.Si, Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang, West Sumatra 25163, Indonesia

EDITORIAL ADDRESS

Department of Chemistry
Faculty of Mathematics and Natural Sciences
Universitas Andalas
Kampus Limau Manis, Padang
West Sumatra 25163, Indonesia
Email : jurnalrisetkimia@sci.unand.ac.id
Website: <http://jrk.fmipa.unand.ac.id/index.php/jrk/index>

TABLE OF CONTENTS

	Page
Development and Testing of a Portable Air Purifier with Chemical and UV-C Filtration for Virus and Pollutant Removal Ailsa Rahma Yunita, Sabella Vegasty, Zhahira Nur Izati, Adhie Massardi, Triana Kusumaningsih, and Maulidan Firdaus*	1 – 13
Optimization of P3HT:PCBM Bulk Heterojunction Polymer Solar Cells: Effects of Annealing Temperature and Active Layer Composition Hardeli, Hary Sanjaya, Riri Indah Nitami Harahap, Putri Permatasari*	14 – 26
Synthesis of Pyridazinone Derivatives Substituted with Methoxy with Phenyl Hydrazine and In Silico Test of Anticancer Activity Winda Permata, Putri Mar, Hilwan Yuda, and Jasril*	27 – 38
Harnessing Indigenous Fermentation: Probiotic Lactic Acid Bacteria from West Sumatera's Dadih Prima F. Hillman*, Geliz Luh Titisari, and Syafrizayanti*	39 – 50
Phytochemical Screening, Antioxidant and Cytotoxic Activities of Ethyl Acetate Extract of <i>Calotropis gigantea</i> Flower Irwan Irwan*, Muhammad, Yasinia Ayu laisni, Nissa Aulia Putri	51 – 58
Corrosion Analysis on Stainless Steel (SS304) Using A Coating Method Based On Silica from Natural Sand of Hukurila Village Stevi Silahooy*, Geovanny Branchiny Imasuly, Wilma Latuny, Delpina Nggolaon	59 – 68
Optimization of Tannic Acid Polymerization to Improve the Efficiency of Dye-Sensitized Solar Cells: Effect of Temperature and Monomer Concentration Dwi Agustini, Hardeli, Budhi Oktavia, and Putri Permatasari*	69 – 83
Classification using FTIR and UV-Vis spectra combined with chemometrics and GC-MS profiles of <i>Brucea javanica</i> fruit extracts with different extracting solvents Deni Agus Triawan*, Charles Banon, Ria Nurwidiyani, and Morina Adfa	84 – 96
Development and Characterization of Recycled Polypropylene/Teak Wood Dust Composites for Sustainable Applications in the Automotive Components Industry: Thermal and Mechanical Properties Erfina Oktariani*, Armilia Ailsa Ahnaf, Rebecca Christine, and Herlin Arina	97 – 107
Rapid Detection and Quantification of Gambir Adulteration Using ATR-FTIR Spectroscopy Coupled with Chemometric Analysis Dedi Satria*, Yenni Eranisa, and Afdhil Arel	108 – 121

Structure, Morphology, Optical, Magnetic and Dielectric Properties of $\text{Ni}_{1-x}\text{Cd}_x\text{Fe}_2\text{O}_4$ 122 – 134
Material Synthesized by Autocombustion Method
Poppi Darmila Libra, Syukri, Yeni Stiadi, Rahmayeni*