

PREFACE

Greetings,

We now present *ALCHEMY Jurnal Penelitian Kimia* Vol 21 No 2 (2025) as a commitment to developing chemistry rooted in local potential and oriented towards global sustainability. The articles presented in this edition show how chemical research is able to answer environmental, health, and technological challenges through innovative and multidisciplinary approaches.

We open this edition with a study of the antibacterial activity of the *Avicennia* mangroves, highlighting the richness of coastal ecosystems as a source of bioactive compounds. Following the recovery of nutrients from tofu waste through struvite precipitation, it offers a circular solution for managing food industry waste. The use of keratin from chicken feathers as an environmentally friendly coagulant reinforces the narrative of green chemistry that is useful.

Innovations in ZnO synthesis using pineapple extract as a photocatalyst and bioreducer-based silver nanoparticles demonstrate the continuous advancement of synthesis technology. Bajakah extract lozenges formulation was performed based on the combined pharmaceutical and phytochemical approaches, and nano facial cleansing from bay leaves with green surfactants enriches the landscape of nature-based cosmetics research. Modified curcumin delivery systems from golden snail shells for breast cancer and histological studies of rat liver due to *Tephrosia vogelii* extract expand the scope of biomedical research and functional materials based on local resources.

We also feature recent research on synergistic improvement of polymer composites for electromagnetic interference shields, the development of hybrid materials from local pyrophilites with PEG-4000, and bioplastic innovations based on chitosan and sago starch. In analytical chemistry, paper-based chemical sensors for flavonoid analysis show progress in accurate yet straightforward detection. We also present an article in renewable energy research through spirulina pyrolysis with Ni/Al-SBA-15 catalysts, confirming chemistry's role in energy transition and biomass management. In closing, three articles separately discuss the extraction of anthocyanin, flavonoid, and microcellulose from bioresources.

We hope that this edition will be a source of inspiration and reference for researchers, academics, and practitioners committed to developing chemistry that has a real impact. Thank you to all the authors, reviewer partners, and editorial team for their outstanding contributions in maintaining the quality and integrity of this publication.

Warm regards,

Editorial Team

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