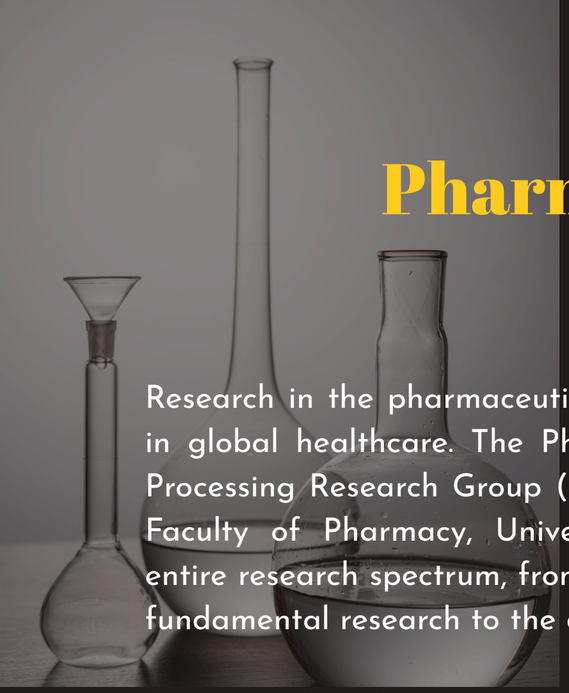


Pharmaceutical Material Engineering and Processing Research Group

Research in the pharmaceutical field is a strategic and primary area in global healthcare. The Pharmaceutical Material Engineering and Processing Research Group (PMEPRG) is a research group under the Faculty of Pharmacy, Universitas Airlangga, operating across the entire research spectrum, from upstream to downstream—ranging from fundamental research to the development of applied products.

Our interdisciplinary research is founded on the principles of engagement, innovation, and positive impact. Utilizing a partnership-based approach, PMEPRG is the ideal partner for advancing drug research with optimal time and resource efficiency.

The PMEPRG team possesses excellent experience in solving challenges in pharmaceutical product development, such as poor solubility, stability, and the need for local and systemic drug delivery.
PMEPRG frequently collaborates with several companies that develop pharmaceutical products, excipients, biotechnology, supplements, nutrition, cosmetics, and even production machinery companies, such as tablet pressing equipment, etc.

Vision

To become an innovative and leading research group on the global stage in the development of pharmaceutical active ingredients and excipients.

Mission

1. To engineer pharmaceutical active ingredients to enhance their physicochemical. mechanical, bioavailability, and effectiveness.
2. To engineer excipients to enhance their physicochemical, and physicomechanical characteristics.
3. to develop preparation processes to improve the characteristics of pharmaceutical raw materials
4. to develop formulations to improve the quality and effectiveness of pharmaceutical preparations
5. To develop effective and efficient manufacturing processes for pharmaceutical preparations.

Your partner in pharmaceutical research

Our Services
Providing the Resources & Technology You Need

PMEPRG offers R&D solutions to meet the requirements of your product development process, starting from pre-formulation, formulation, manufacturing (from laboratory scale to scale-up), and finally, technology transfer. We have established cooperation and collaborated with various national and international partners in previous research. Our motivation lies in the optimism of forging partnership to generate solutions for issues related to formulation and other associated aspects. The PMEPRG team holds expertise and experience in offering various services to industries that require solutions in the development process of their diverse products, including pharmaceuticals, biotechnology, supplements, nutrition, and cosmetics.

Material Property Analysis

- Drug release and stability testing.
- Development of analytical methods, validation, and optimization of testing procedures.
- Raw material testing and product characterization.
- Product identification and evaluation.
- Compendial verification and qualification.

New Drug Development

- Pre-formulation: Enhancement of solubility and stability testing. Physical, chemical, and mechanical characterization. Polymorphism, etc.
- Process optimization and validation
- Scale-up and technology transfer

Dosage Form Design

- Conventional Dosage Forms including: Solid (tablets, capsules, pellets), Semi-solid (gels, creams), Liquid (solutions, suspensions, emulsions).
- Novel Dosage Forms: Fast-acting, long-acting, pulsed, sustained, delayed, enteric. Enhancement of physicochemical characteristics, e.g., solubility, stability, metabolism, permeability, bioavailability. Targeted delivery: local or systemic

Advanced Formulations

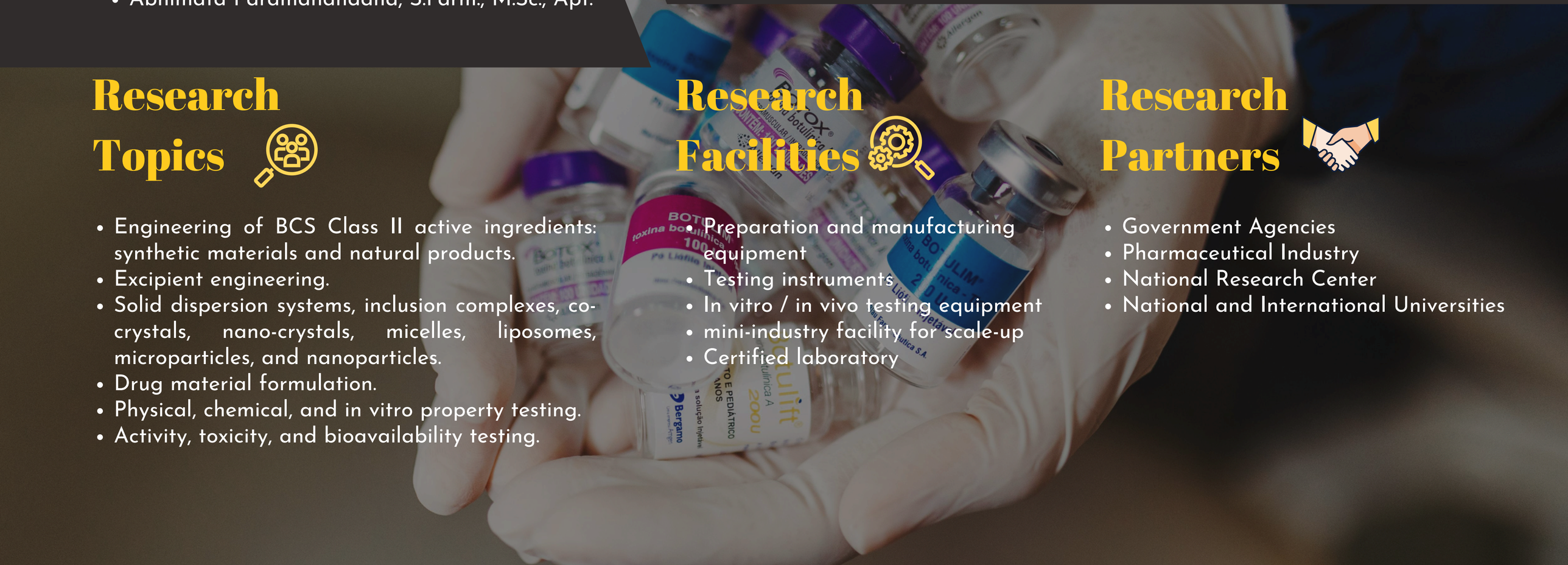
- Nanotechnology: Nanoparticles, liposomes, micelles, polymeric nanoparticles, lipid nanoparticles, nanoemulsions, nanocrystals, nanosuspensions.
- Coating and Encapsulation: Fluid bed coating, Spray dryer, Extrusion/ spheronisation.
- Novel Drug Delivery Systems: Solid dispersions, Films, Implants, Inclusion complexes, Microparticles, microcapsules, Microspheres, Pellets.

Our Members

- Prof. Dr. apt. Dwi Setyawan, S.Si., M.Si.
- Prof. Dr. Dra. Retno Sari, MSc., Apt
- Prof. Dr. Dewi Isadiartuti, M.Si., ,Apt.
- Prof. apt. Helmy Yusuf, S.Si.,M.Sc.,Ph.D
- Dr.rer.nat. Maria Lucia Ardhani DL, M.PharmSci
- Abhimata Paramanandana, S.Farm., M.Sc., Apt.

Contact Us

Faculty of Pharmacy
Universitas Airlangga Campus C – Mulyorejo, Surabaya
Telp. (031) 5933150, Fax. (031) 5935249
Website : http://ff.unair.ac.id
Email : info@ff.unair.ac.id



Research Topics

- Engineering of BCS Class II active ingredients: synthetic materials and natural products.
- Excipient engineering.
- Solid dispersion systems, inclusion complexes, co-crystals, nano-crystals, micelles, liposomes, microparticles, and nanoparticles.
- Drug material formulation.
- Physical, chemical, and in vitro property testing.
- Activity, toxicity, and bioavailability testing.

Research Facilities

- Preparation and manufacturing equipment
- Testing instruments
- In vitro / in vivo testing equipment
- mini-industry facility for scale-up
- Certified laboratory

Research Partners

- Government Agencies
- Pharmaceutical Industry
- National Research Center
- National and International Universities