

MUHAMMAD FAISHAL RAHMAN

Laboratory Analyst | Chemical Analysis | Laboratory Quality Management

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Portfolio: katalog-gerabah-sitiwinangun.my.canva.site/porto-mfaishalr | Driving License A & C

PROFILE

Food Nanotechnology graduate (D4, GPA 3.62/4.00) from Politeknik AKA Bogor with a strong foundation in analytical chemistry and laboratory quality management. I have independently operated a wide range of chemical analysis and material characterization instruments across multiple research projects, always paired with traceable documentation and structured validation. I am familiar with the principles behind ISO/IEC 17025 (testing and calibration), Good Laboratory Practice, and root cause analysis, and I approach lab work with the precision and consistency these standards require.

WHY I FIT THIS ROLE

- Independent, hands-on operation of a wide instrument range: GC, HPLC, AAS, UV-Vis, FTIR, DSC, PSA, UTM, XRD, SEM, TEM.
- Awareness-level training in ISO/IEC 17025 testing and calibration requirements, plus ISO 9001 and ISO 22000.
- Consistent habit of traceable documentation and staged validation, built through both thesis research and internship work.
- Comfortable applying root cause analysis when investigating inconsistent or out-of-specification results.

RESEARCH & PROFESSIONAL EXPERIENCE

Undergraduate Thesis: Starch-Based Bionanocomposite Packaging Development | *Politeknik AKA Bogor* Jan 2026 – Apr 2026

- Performed material characterization using FTIR, DSC, UV-Vis, UTM, and WVTR across 5 formulation variants, documenting all procedures and results in a traceable technical report.

Academic Research: Nanoencapsulation of Bioactive Compounds for Food Applications | *Politeknik AKA Bogor*

- Operated GC, HPLC, and AAS for compound identification and quantification, and UV-Vis spectrophotometry for antioxidant capacity analysis.

Research Collaborator: Nanocrystalline Cellulose Synthesis and Feasibility Study | *BRIN (National Research and Innovation Agency)* Aug 2025 – Dec 2025

- Conducted particle size analysis (PSA), crystallinity measurement, and morphological characterization (TEM) as part of material quality control.

R&D Intern | *PT Startech Multi Invensi, Bogor*

Sep 2025 – Dec 2025

- Conducted incoming raw material inspection and supported quality testing, maintaining accurate and traceable laboratory records.

TECHNICAL SKILLS

- Chemical Analysis: GC, HPLC, AAS, UV-Vis Spectrophotometer, DPPH/ABTS antioxidant assays, total phenolic content.
- Material Characterization: FTIR, DSC, PSA, UTM, Zeta Potential, WVTR, BET, XRD, SEM, TEM.
- Laboratory Standards: ISO/IEC 17025:2017, Good Laboratory Practice, ISO 9001:2015, ISO 22000:2018.
- Software: Microsoft Excel, Word, PowerPoint, OriginPro, Minitab.
- Languages: Bahasa Indonesia (Native) | English (Professional working proficiency, TOEIC 660).

EDUCATION

Bachelor of Applied Science (D4), Food Nanotechnology 2022 – 2026

Politeknik AKA Bogor, Ministry of Industry, Republic of Indonesia | GPA: 3.62/4.00 | Graduated 2026

CERTIFICATIONS & ACHIEVEMENTS

- BNSP Professional Competency Certificate: Synthesis and Characterization of Polymer Nanoparticles - Declared Competent, 2026
- BNSP Professional Competency Certificate: Synthesis and Characterization of Metal Nanoparticles - Declared Competent, 2026
- Halal Certification Facilitator - BPJPH, 2025
- ISO 9001:2015, ISO 22000:2018 & ISO 17025:2017 Awareness - Politeknik AKA Bogor, 2025
- 3rd Place, PKM Teknologi Tepat Guna (National Research Competition), 2024
- Recipient, Outstanding Student Scholarship
- Publication: Rahman, M.F., et al. (2026), Warta AKAB, Vol. 50, No. 1, DOI: 10.55075/wa.v50i1.304 (Sinta 4-indexed journal)

* Nano to Application !

“Menjembatani Material Science, Food Technology, dan Applied Chemistry”

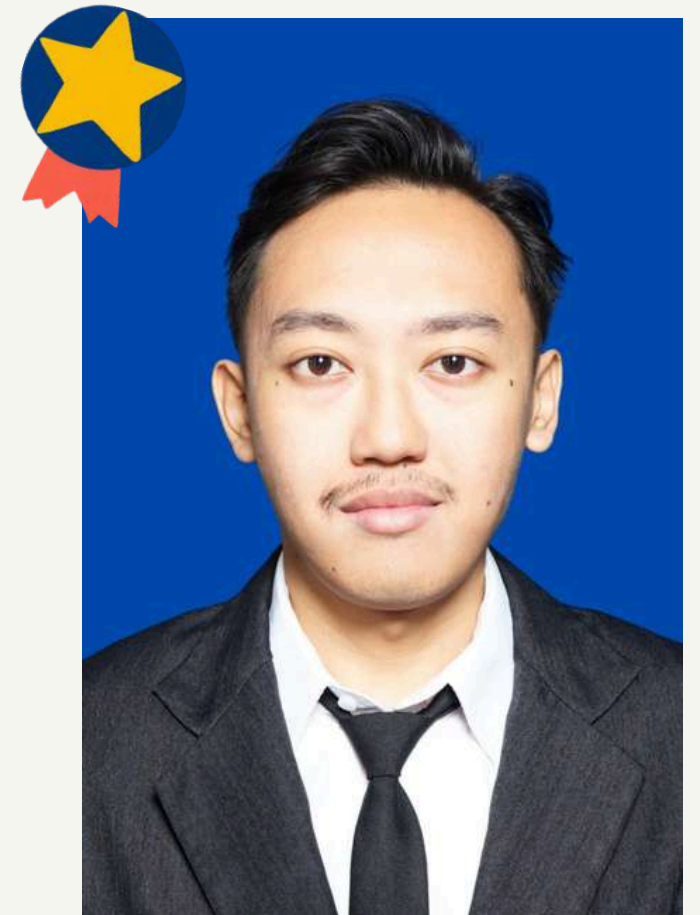
R&D - Quality - Material Innovation

PORTOFOLIO

HUBUNGI SAYA



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Bogor, Indonesia | Open To Work



Tentang Saya 😊

Perkenalkan, saya Muhammad Faishal Rahman, lulusan Sarjana Terapan (D4) Food Nanotechnology dari Politeknik AKA Bogor (IPK 3,62/4,00), program studi yang memadukan material science, food technology, dan applied chemistry.



Perpaduan ini menempa kemampuan saya menganalisis material dari tingkat molekuler hingga aplikasi industri, dari sintesis nanopartikel hingga quality control produk, dengan pengalaman riset kolaboratif bersama BRIN, industrial internship, dan kepemimpinan organisasi. Ke depannya, saya ingin berkembang di bidang **Research & Development, Quality Control/QA, hingga Management Trainee.**

Apa itu Nanoteknologi Pangan?



Persimpangan Tiga Ilmu, Satu Kompetensi

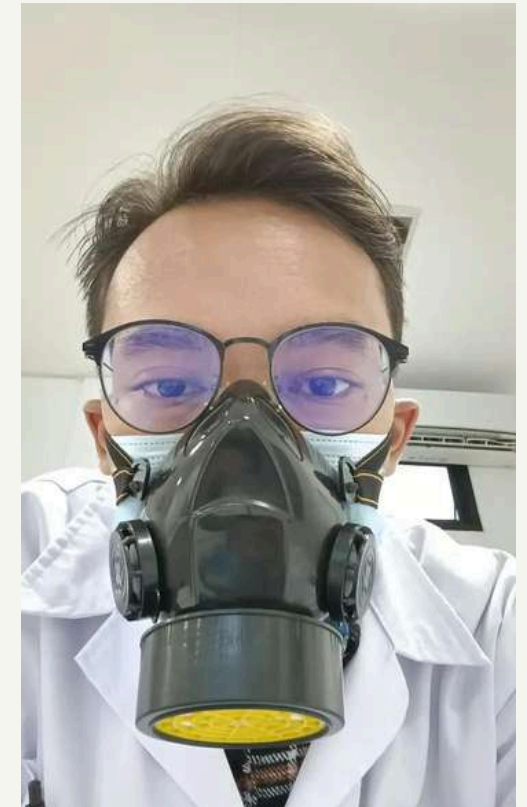


- Material Science = memahami struktur, sifat, dan karakterisasi material (polimer, nanocellulose, komposit) melalui FTIR, DSC, UTM, XRD, TEM, SEM.
- Food Technology = menguasai prinsip food safety, regulasi BPOM, HACCP, dan ISO 22000 dalam konteks produk dan kemasan pangan.
- Applied Chemistry = terampil dalam nanomaterial synthesis, analisis kimia kuantitatif (GC, HPLC, AAS, UV-Vis), dan product formulation.



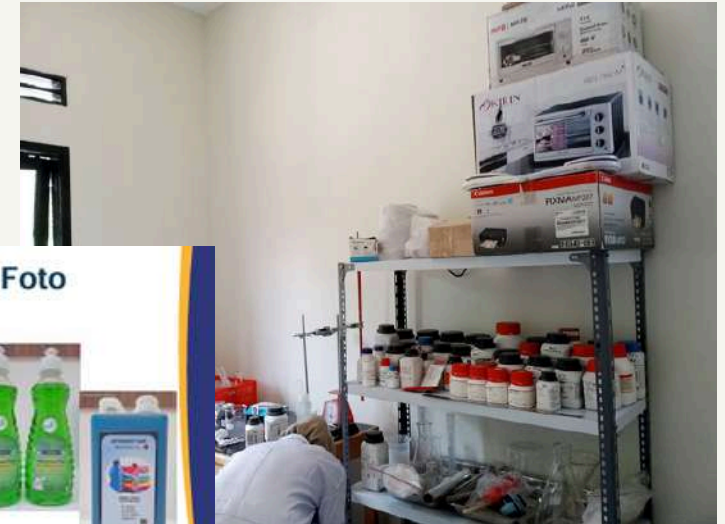
Kompetensi Teknis

- Material characterization: FTIR, DSC, UTM, XRD, SEM, TEM, BET, Zeta Potential, PSA
- Chemical analysis: GC, HPLC, AAS, UV-Vis Spectrophotometer
- Quality control & quality assurance: incoming inspection, in-process control, non-conformance analysis, dokumentasi mutu
- Regulasi dan standar: GMP, HACCP, ISO 9001, ISO 22000, ISO 17025, BPOM, sertifikasi Halal
- Project leadership dan manajemen tim riset
- Bahasa Inggris profesional (TOEIC 660)



Pengalaman Kerja

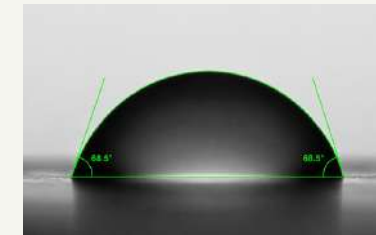
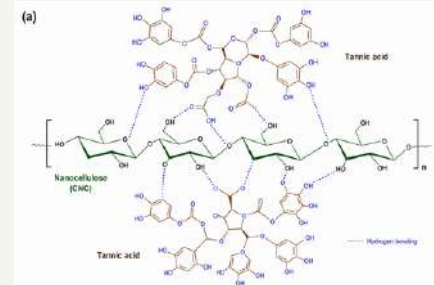
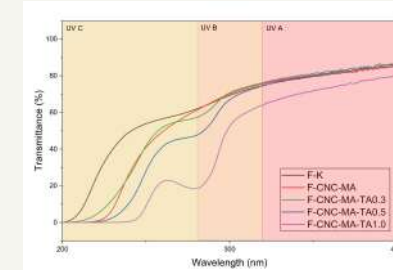
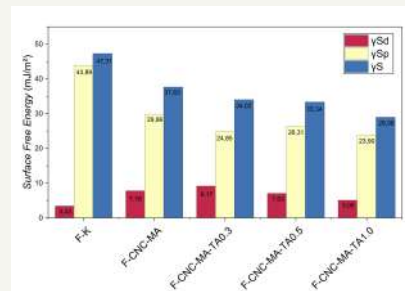
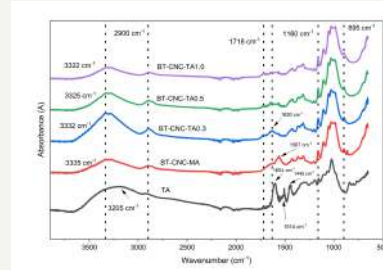
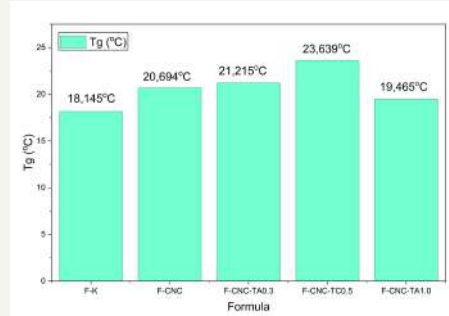
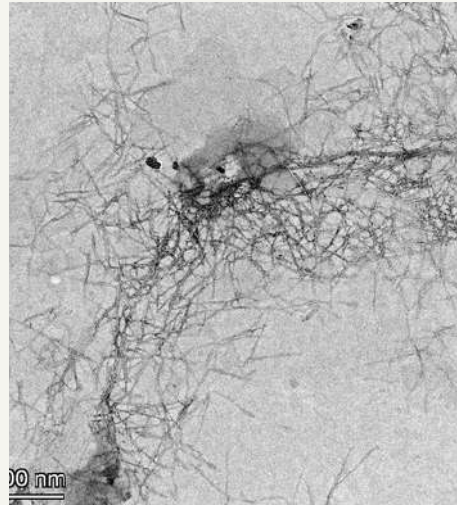
“R&D Intern, PT Startech Multi Invensi”



- Memformulasikan dan mengoptimalkan produk pembersih Lantai dan Pakaian cair
- Melakukan incoming material inspection dan evaluasi kualitas Produk Garam
- Analisis Fisika dan Kimia Garam Yodium/Non
- Dokumentasi mutu dan corrective action; koordinasi lintas fungsi

Pengalaman Penelitian

Tugas Akhir = Bionanocomposite Packaging Berbasis Pati



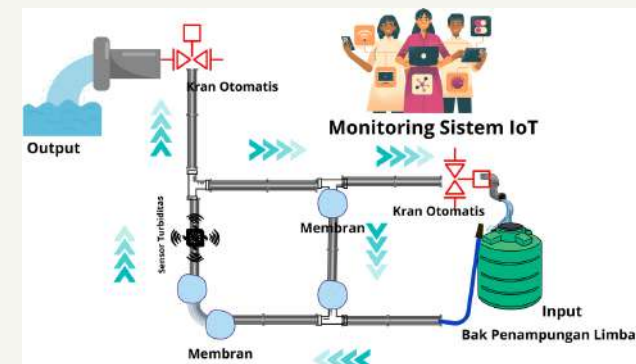
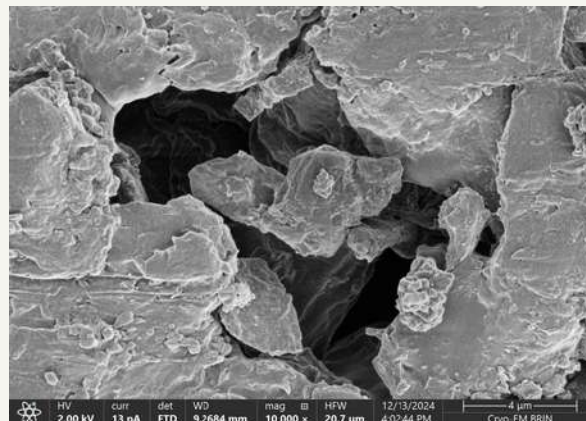
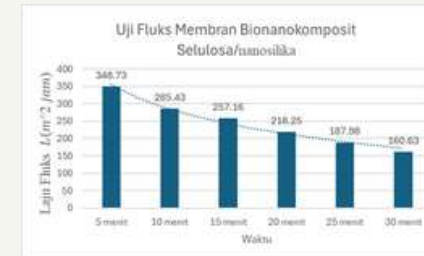
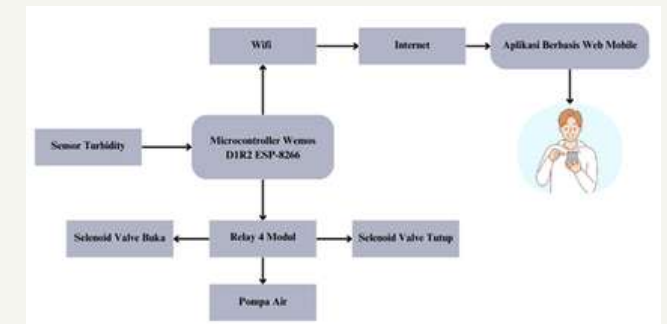
- Latar Belakang: Mengembangkan film biokomposit berbasis pati dan TA-CNC untuk kemasan ramah lingkungan
- Tujuan: Meningkatkan kekuatan mekanik, thermal, sifat barrier (WVTR ↓), dan UV-blocking
- Metode: solution casting; karakterisasi FTIR, DSC, UV-Vis, UTM
- Hasil: Tensile Strength meningkat hingga 3x, Sifat barrier meningkat hingga 50%, serta sifat fungsionalitas UV-Blocking meningkat



Ketua Tim Riset PKM

“Biocomposite Membrane Berbasis IoT”

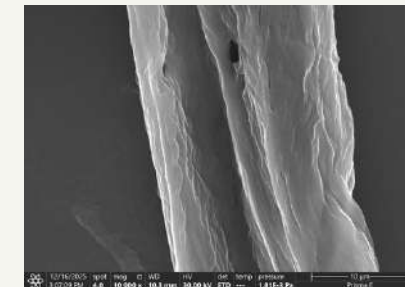
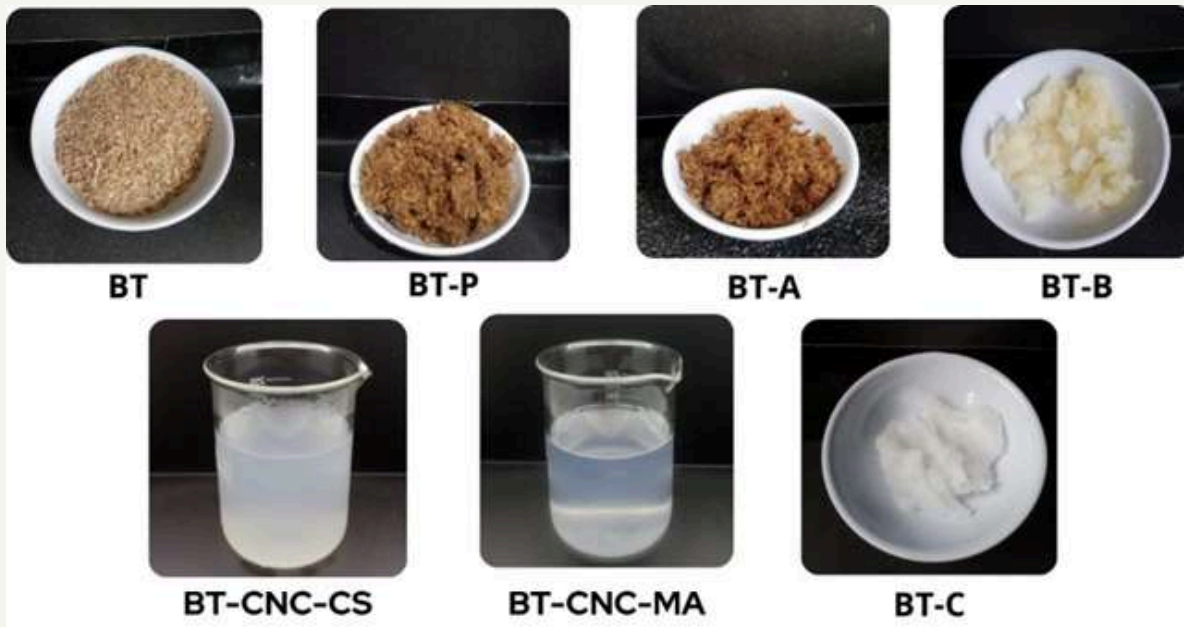
- Memimpin pengembangan membran biokomposit selulosa/nanosilika
- Mengintegrasikan sistem monitoring kekeruhan berbasis IoT
- Hasil: penurunan kekeruhan 50,88%, penyisihan TSS 68,39%
- Juara III PKM Teknologi Tepat Guna ; publikasi Sinta 4



Riset Kolaboratif dengan BRIN

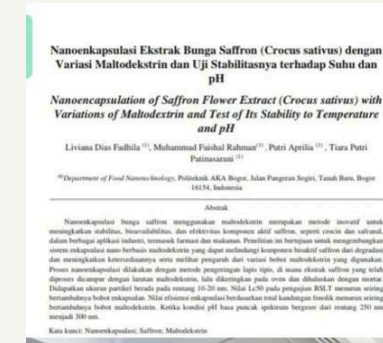
“Nanocrystalline Cellulose Synthesis From Tobacco Stem”

- Sintesis nanocrystalline cellulose melalui organic acid hydrolysis
- Hasil: yield 30%, diameter fiber 118 nm, kristalinitas 85%
- Menyusun feasibility study untuk evaluasi scale-up ke skala industri



Proyek Tim Riset Akademik Lainnya

- Nanoencapsulation senyawa bioaktif dan antioksidan pangan fungsional
- Nanokomposit kitosan/MgO/Ag
- Nanopartikel Ekstrak daun urang aring
- Proyek aplikasi LapAKABogor sebagai e-commerce pertama di kampus



Pengalaman Organisasi

“SASEKA Politeknik AKA Bogor”



- Menjabat sebagai Ketua umum (2023–2024) dan Koordinator Logistik (2024–2025) organisasi mahasiswa, memimpin koordinasi kegiatan dan pengelolaan tim.
- Diakui sebagai Most Solution-Oriented Member atas kontribusi dalam penyelesaian masalah organisasi.



Sertifikasi

- BNSP - Synthesis and Characterization of Polymer Nanoparticles (2026)
- BNSP - Synthesis and Characterization of Metal Nanoparticles (2026)
- Awareness ISO 9001:2015, ISO 22000:2018, ISO 17025:2017
- Halal Certification Facilitator (BPJPH)



Terbuka untuk Berkontribusi di Berbagai Peran

Dengan latar belakang lintas disiplin dalam material, pangan, dan kimia terapan, serta pengalaman memahami proses riset dari skala laboratorium hingga feasibility study untuk scale-up industri, saya terbuka untuk berkontribusi pada posisi:

- **Research & Development / Product Development**
- **Quality Control / Quality Assurance / Quality Management**
- **Management Trainee**
- **Supply Chain dan Operasional**

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