Nanotechnology and Catalysis Research Centre

NANOCAT ANNUAL REPORT 2023

NANOCAT
NANOTECHNOLOGY AND CATALYSIS RESEARCH CENTRE

UNIVERSITI MALAYA

VISION

To be an internationally renowned and recognized CoE in Catalysis and Nanomaterials

MISSION

To advance technological excellence in multidisciplinary research for address the key challenges of 21st century

NANOCAT Research Centre
Annual Report 2023

EDITORIAL TEAM
Prof. Dr. Mohd Rafie Bin Johan (Director)
Dr. Marlinda Ab Rahman (Head of Editorial Team)
Lia Zaharani (Designer)

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DIRECTOR'S FOREWORD

PROF. DR. MOHD RAFIE JOHAN
FASc, FRSC
Director of Nanotechnology & Catalysis Research Centre

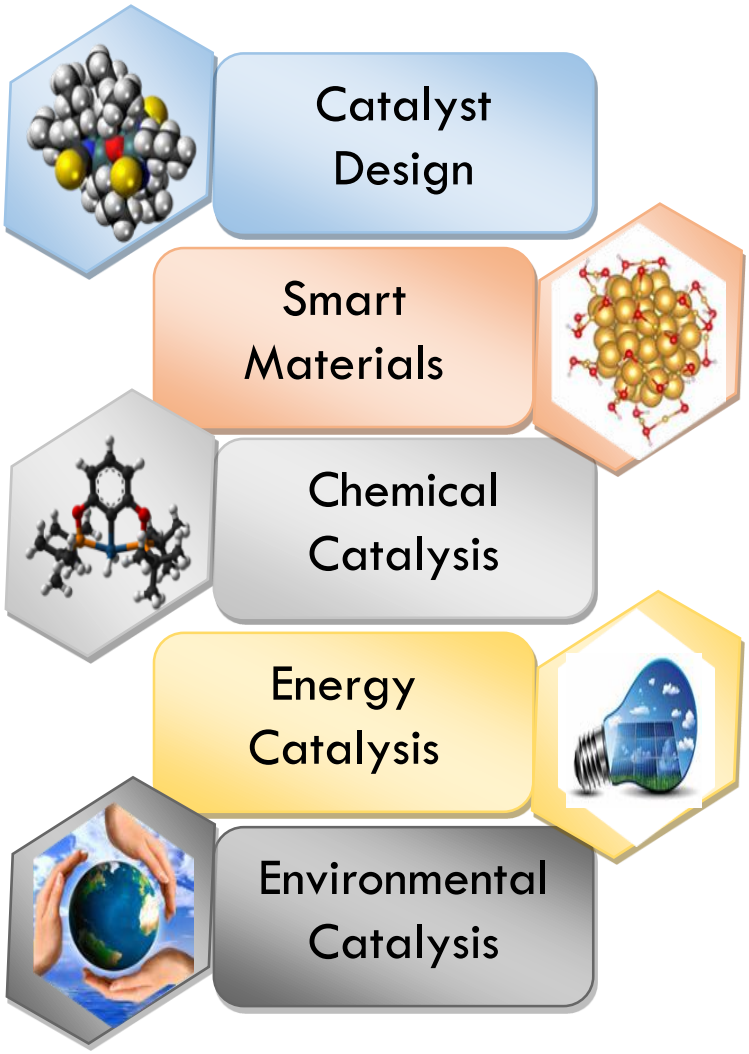
Nanotechnology and Catalysis Research Center (NANOCAT) has been established since 2001 at Universiti Malaya as a specialized center of excellence (COE) in nanotechnology and catalysis. Our vision is to be an internationally renowned and recognized CoE in Catalysis and Nanomaterials. NANOCAT offers students, researchers and academics a wonderful place to study and research. It is highly inter disciplinary in that chemists, biologists, physicists and engineers all work together to create amazing new materials with remarkable properties and to develop devices that change the way we live. They are also encouraged to carry out their individual scientific research resulting in publications in the best journals. NANOCAT also has strong collaboration with the industrial partner such as Petronas, Hartalega, Oleon and others. We have access to the latest analytical equipment including filed emission scanning electron microscopes, x-ray diffraction, BET analysis, various spectroscopies, chemical reactors and thermal analysis methods.

ABOUT NANOCAT

NANOCAT (Nanotechnology and Catalysis Research centre) is a PTj incorporated by UM in 2012, a UMCoE. Its mission is to be a world leader in "catalysis and nanotechnology" coining sustainability and green technology. NANOCAT research thrust is deploying catalysis to support energy, chemical synthesis, environment pollution and global warming mitigation as well as designing smart materials as catalyst, sensor, nanocoating, and nanocomposite.

NANOCAT was given a status of HICoE Potential in 2013, in catalysis. The Centre has strived to attain a national status for HICoE (MOHE) as well as NanoCentre (NNC, MOSTI) with strong support and commitment from Universiti Malaya. In the last 7 years, 2017 to 2023, it witnessed a pronounced explosion in its productivity in all aspects.

SCOPE OF RESEARCH



RESEARCH PROJECT

As a national research center focusing on nanotechnology and catalysis, NANOCAT has come out with a strategic planning in research grant application. With that in mind, the emphasis has been given to five niche areas of NANOCAT which are catalyst design, energy, chemical synthesis, and environmental mitigation as well as smart materials.

MANAGEMENT STAFF

PROF. DR. MOHD RAFIE JOHAN
FASc, FRSC
Director of Nanotechnology & Catalysis Research Centre

Mohd Rafie Johan was a Professor of Materials Engineering in Department of Mechanical Engineering, University of Malaya. Currently, he is Director of Nanotechnology and Catalysis Research Center (NANOCAT), University of Malaya. He gained his PhD in 2005 from Department of Physics, University of Malaya. He is the author in 388 peer-reviewed (ISI) papers with *h*-index 40. Prof. Rafie is well recognized internationally in the field of Nanotechnology. Testimony to this, he has been elected in Evaluation Panels for AET and ITR clusters and UPGP and for grants applications at UMRG, PRGS, FRGS and Qatar Foundation. He has been appointed as a panel for Yang di Pertuan Agong Scholarship and COMSTECS for Islamic Organization Country for evaluation of best scientific papers for Muslim Scientist. He also secured funding as PI from the University of Malaya and Malaysian Government. For the past two years, Prof Rafie has been appointed the editor-in-chief of The International Conference of Science and Engineering Materials (ICOSEM). Prof Rafie has been invited as a speaker to numerous talks and conferences and also Guest Editor for Symmetry (ISI journal) and editor for Asean Engineering Journal. He leads Nanomaterials Engineering Research Group of 20 ongoing PhD and 5 ongoing Masters students. These supervised students span over a quite broad scientific area going from science (chemistry, physics, material science, biology) to engineering (chemical, material).

PROF. DR. WAN JEFFRY BASIRUN
FASc, FRSC, FIAM
Deputy Director of Nanotechnology & Catalysis Research Centre

Wan Jefrey Basirun is currently a Professor in Electrochemistry and Physical Chemistry started his career in the department of Chemistry, University Malaya as the department undergraduate tutor in 1991 upon graduation in bachelors in Science with honors majoring in Chemistry, and proceeded with a PhD degree in electrochemistry in 1997 from the University of Southampton in United Kingdom in 1997. Since joining the active research groups in the department of Chemistry in 1997, he has supervised of 3 ongoing PhD students, in addition have authored and co-authored more than 340 papers in journals indexed ISI web of knowledge, with a *h*-Index of 51. His appointment as the Deputy Director in NANOCAT in July 2018 is aimed to strengthen NANOCAT's niche research areas. His research interest is on the use of nanomaterials and nanocomposites in catalytic processes, sensors, biomaterials and energy conversion and storage.

ACADEMIC STAFF

PROF. DR. JUAN JOON CHING FRSC, CChem, CSci

ASSOC. PROF. DR. ONG BOON HOONG

ASSOC. PROF. IR. TS. DR. LAI CHIN WEI PEng, PTech, CEng

ASSOC. PROF. DR. NADER GHAFFARI KHALIGH

ASSOC. PROF. DR. SURESH SAGADEVAN FRSC

ASSOC. PROF. DR. LEE HWEI VOON

ASSOC. PROF. DR. NURHIDAYATULLAILI MUHD JULKAPLI

DR. CHEE CHIN FEI

DR. ZAIRA ZAMAN CHOWDHURY

DR. NOR ALIYA HAMIZI

DR. YASMIN ABDUL WAHAB

DR. MARLINDA AB RAHMAN

ADMINISTRATIVE STAFF

Nur'Adilah Md Jelani
Assistant Registrar (N41)

Afzalina Che Kob @Yaacob
Project Officer (N41)

Khairul Iskandar Baharom
Assistant Engineer (JA29)

Nur Ain Nadia Binti Shapril
Research Assistant

TECHNICAL STAFF

Dr. Lee Kian Mun
Research Officer (Q52)

Durga Devi Suppiah
Research Officer (Q48)

Fatimah Zahara Abdullah
Research Officer (Q41)

Nuramera Pa'dek
Science Officer (C44)

Farhana Abd Wahid
Assist. Science Officer (C29)

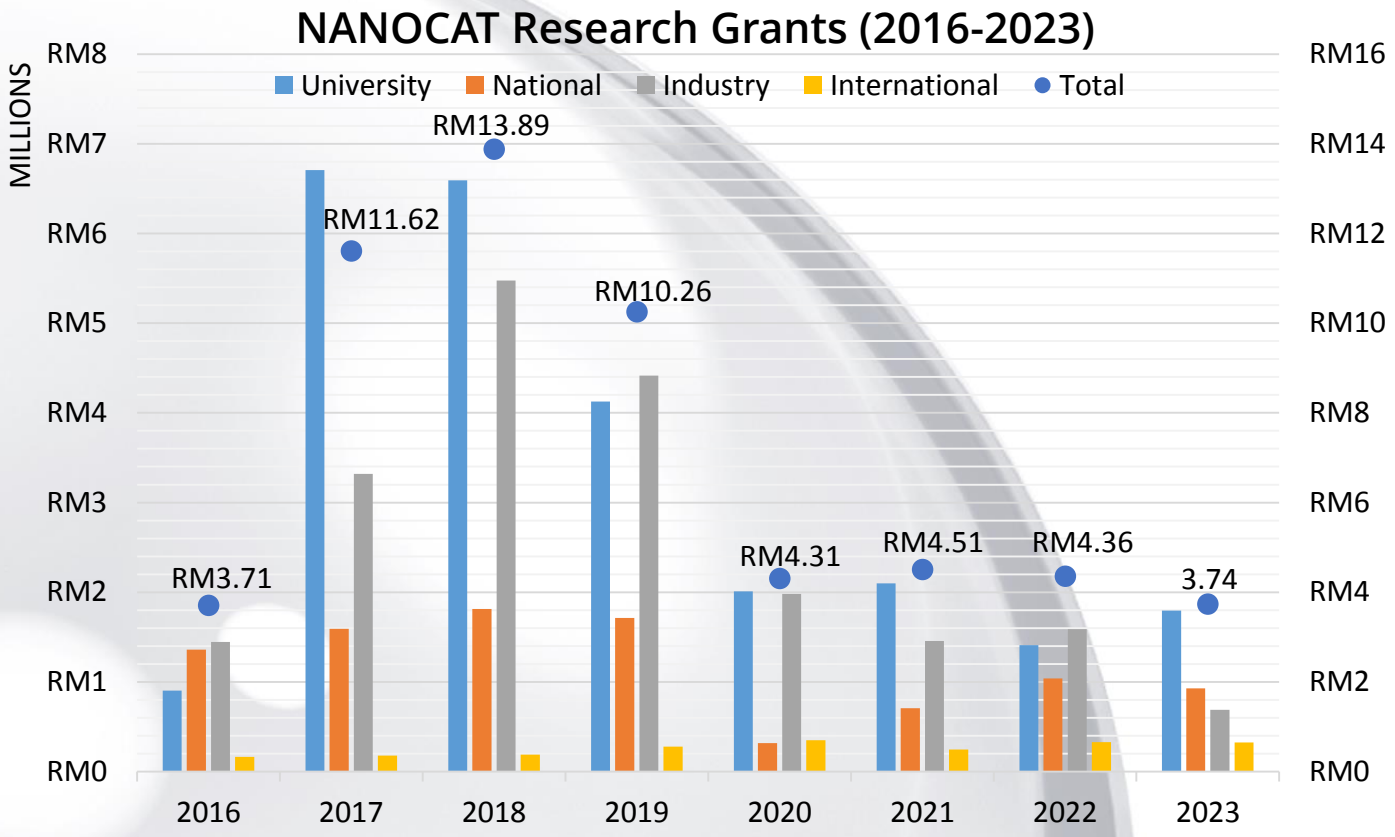
Mohamad Safuan Kamaruddin
Assistant Science Officer (C29)

Nur Azrin Daud
Research Assistant

Izazi Azzahidah Amin
Research Assistant

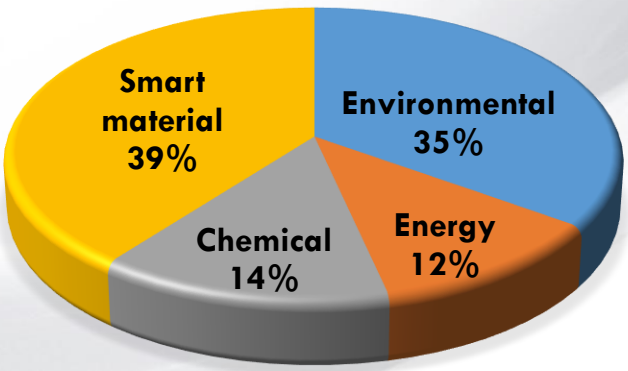
Mohd Rashid Yusof Hamid
Research Assistant

RESEARCH FUNDINGS



As a national research centre focused on nanotechnology and catalysis research areas, NANOCAT has come out with a strategic planning in research grant application. With that in mind, the emphasis has been given to four niche areas of NANOCAT which are environmental, smart materials, chemical synthesis and energy that aligned with the Sustainable Development Goals (SDGs). This has been clearly translated to the active research grant 2023 secured by NANOCAT academic staff, which out of RM 3,737,304.60 total amount of research funding received, 39 % was contributed by the smart materials, 35 % by environmental studies, 14 % by chemical synthesis, and 12 % by energy-related studies. The focused of research grant sources selection for NANOCAT Research Center is based on the Industrial grant, UM Research Grant, National Grant, and International Grant with the amount percentage of 48%, 25%, 18% and 9%, respectively. With this amount of funding received, NANOCAT research thrust could progressively developing and serving catalysis and nanotechnology research not only in Malaysia basis but also over the international region.

Niche Areas 2023

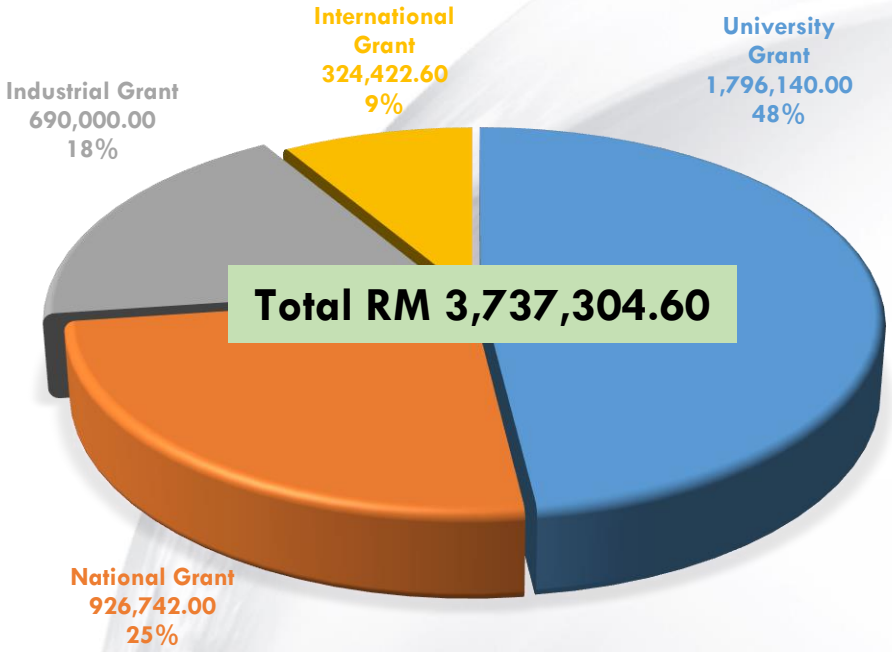


2018: Environment → Smart materials → Energy → Chemical
2019: Environment → Smart materials → Energy → Chemical
2020: Smart material → Environment → Chemical → Energy
2021: Smart material → Environment → Chemical → Energy
2022: Smart material → Environment → Chemical → Energy
2023: Smart material → Environment → Chemical → Energy

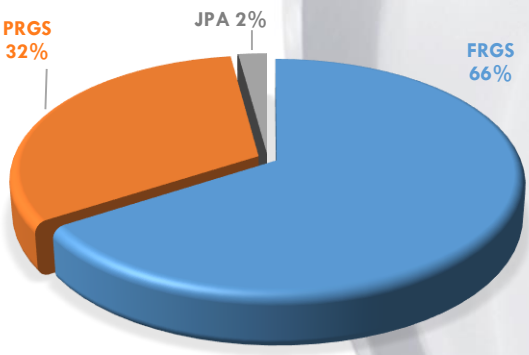
*Total of 43 active projects.
**Keywords from project titles used to determine the niche areas.

RESEARCH GRANTS

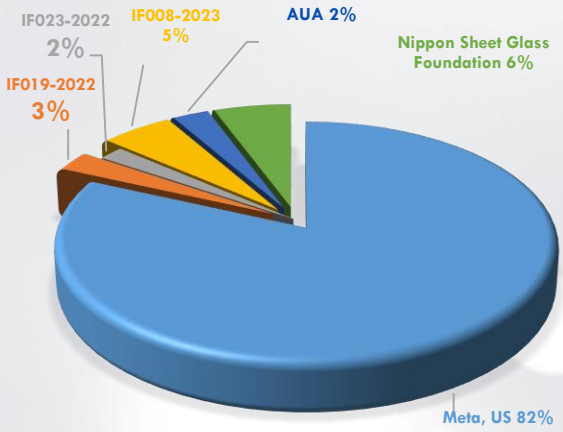
Active Research Grants



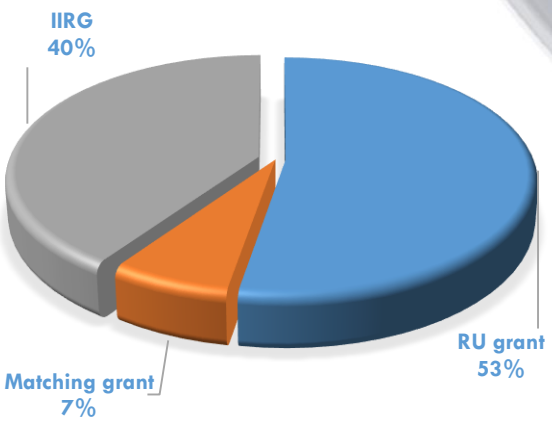
National Grants



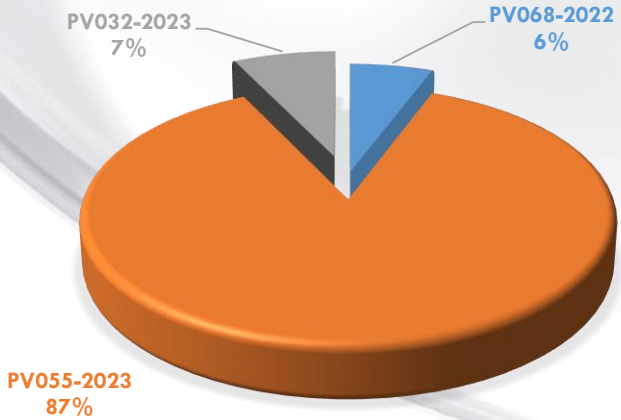
International Grants



UM Grants

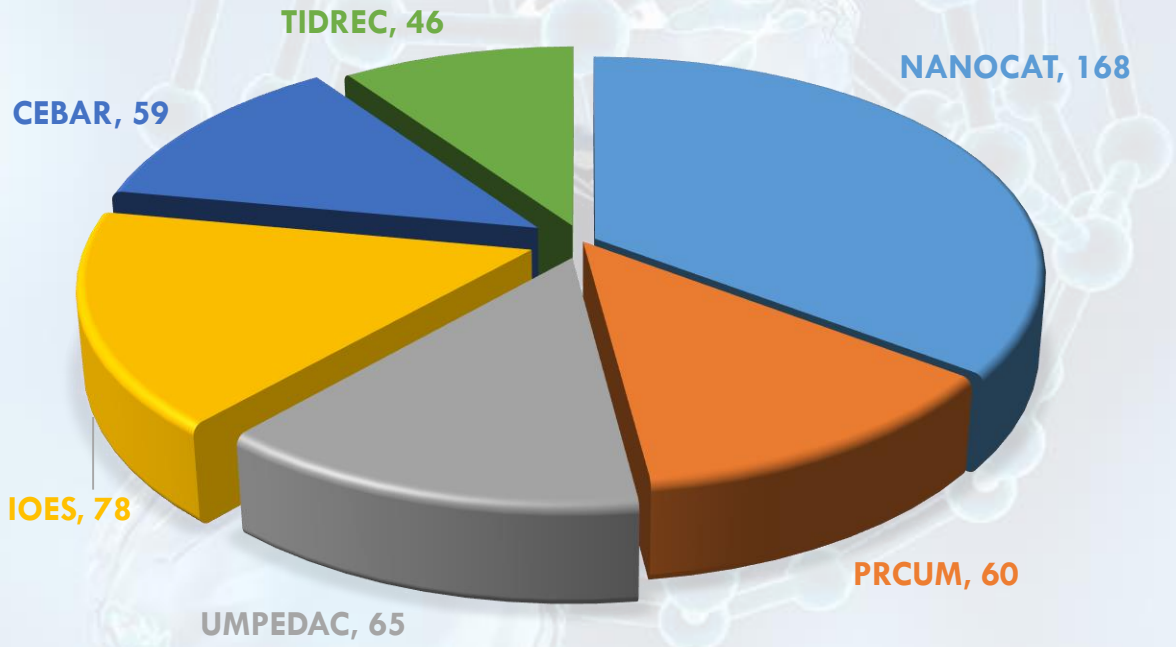


Industry Grants

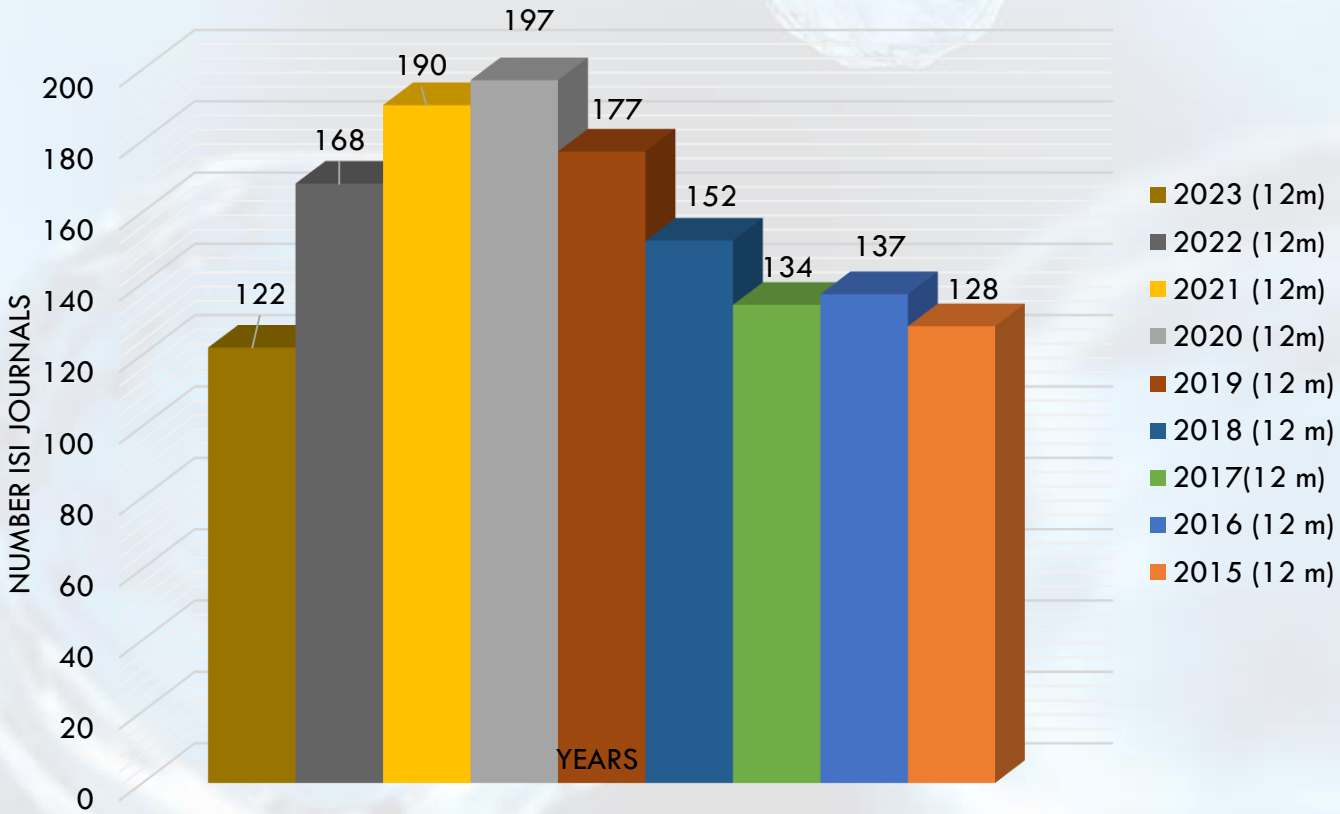


PUBLICATIONS ANALYSIS

UM PAPERS INDEXED IN WOS ACCORDING TO UM CENTRE OF EXCELLENCE (6 UMCOES) – AS OF 31TH MARCH 2023



ISI PAPERS_NANOCAT (UM) INDEXDED IN WOS (2015 – 2023)



RESEARCH FACILITY

Spectroscopy Hall

The Spectroscopic Hall, a laboratory within NANOCAT, focuses on determination of physical and chemical structural properties, chemical properties, morphological and texture properties, for liquid, semisolid and solid samples.

- Scanning Electron Microscope (SEM)
- Raman Spectroscopy (RAMAN)
- Elemental Analyser (CHNOS)
- Fourier Transform Infra red (Ex situ-FTIR)
- Fourier Transform Infra red (In situFTIR)
- Differential Scanning Calorimetry (DSC)
- Differential Scanning Calorimetry (In situ-DSC)
- Zeta Potential (ZP)
- Particle Size Distribution (PSD)
- Thermogravimetry Analysis (TGA)
- Thermogravimetry Mass Spectroscopy (TG-MS)
- UV-Vis Spectroscopy (UV-VIS)
- Vibration Sample Magnometer (VSM)
- Hall Effect - Ball milling

Reactor & Combinatorial Technology Hall

Reactor Hall focuses on catalytic performance screening and testing especially for petrochemical & bio oil industries. Equipped with GC to quantitatively analyze the reaction products to study the reaction mechanism allowing a reaction selectivity and yield to be optimized.

- Karl Fischer Coulometer (KF)
- Freeze Dryer
- Autoclave 200 ml HS/SS
- Density Meter
- Selective Oxidation Fixed-bed Reactor (SELOX)
- Precipitation Reactor (Lab Max)
- Trickle Flow Reactor (TFR)
- High Performance Liquid Chromatography (HPLC)
- Gas Chromatography (TCD-FID)
- Gas Chromatography (GC-MS)
- Temperature Programmed Desorption, Reduction, and Oxidation (TPDRO)
- Surface Area Analyser (BET Single Port)
- Tensiometer (Surface Tension)
- Fixed-bed Microreactor (atmospheric pressure).
- Gel Permeation Chromatography (GPC)
- Ion Chromatography (IC)

X-Ray Hall

X-Ray Hall provide a non-destructive technique to determine phase composition of solid materials.

- X-Ray Diffraction (Ex situ-XRD)
- X-Ray Diffraction (In situ-XRD)

LABORATORY

- SPECTROSCOPY HALL
- X-RAY HALL
- REACTOR HALL
- COMBINATORIAL TECHNOLOGY HALL
- UM-HARTALEGA LABORATORY
- BIOSYNTHESIS LABORATORY
- NANOMATERIAL LABORATORY
- ADVANCED FUNCTIONAL NANOGROUP LABORATORY
- OLEON LABORATORY
- CHEMICAL CATALYST LABORATORY
- SPECIALTY CHEMICALS HALL
- ENVIRONMENTAL LABORATORY
- ENERGY AND ADDITIVES LABORATORY
- CHEMICAL STORE
- QUANTUM NANOTECHNOLOGY LABORATORY
- NANO MATERIALS ENGINEERING LABORATORY
- BIOMEDICAL SCIENCE LABORATORY
- KAREX LABORATORY
- ENERGY ANF BATTERY LABORATORY
- NANO TRANSITION METAL OXIDE PRODUCTION PLANT

NANOCAT POSTGRADUATE STUDENTS

63rd Universiti Malaya Convocation Ceremony

7 PhD Completions

Suraya Binti Zulkepli(PhD)
Suzaimi Binti Johari (PhD)
Christelle Wong Oau Oing(PhD)
Paul Thomas (PhD)
Abu Hashem (PhD)
Muhammad Luqman Hakin Bin Hashim (PhD)
Taifunisham Taib (PhD)

2 MPhil Completions

Koh Jin Kwei (MPhil)
Nurul Anisa Athira Ab Aziz (MPhil)

LIST Of ITP STUDENTS (BASED ON INSTITUTION): YEAR 2017-2022

Name of The Institution	2017	2018	2019	2020	2021
AIMST University, Malaysia					1
UITM, Malaysia			1		3
Politeknik Nilai, Malaysia					1
University Technology Petronas, Malaysia				3	2
Universiti Malaya, Malaysia	15			1	0
University Sarawak Malaysia					2
Tunku Abdul Rahman University College, Malaysia	4	5			3
University Kebangsaan Malaysia				1	
University Terengganu, Malaysia				1	
Universiti Malaysia Perlis, Malaysia				1	
M'sila, Algérie				2	
SBA Algeria (Sidi-Bel-Abbes University)				1	
Polytech Orléans, France			1		
Navy Engineering College , National University of Sciences & Technology (NUST), Pakistan			1		
Multimedia University, Malaysia	2	5			
University of Nottingham	3				
Ucsi University	1				


October / March Intake
MASTER OF APPLIED SCIENCES (NANOTECHNOLOGY)
Open for MALAYSIAN & INTERNATIONAL Candidates
UNIVERSITI MALAYA
NANOCAT
First in Malaysia
Flexible Mode
Unique upskilling and reskilling opportunities in Nanotechnology
Emerging technologies need nanoscience and nanotechnology
The Master of Applied Sciences (Nanotechnology) program is a program that is carefully crafted and highly relevant to the current needs of the nanotechnology industry. This program is capable of producing graduates who have in-depth knowledge as well as the necessary skills in the field of nanotechnology, in line with current developments. For the sustainability of the program, the syllabus for the courses offered will be evaluated from time to time according to the needs of the industry and sectors related to the application of impactful education practices. Feedback and surveys from graduates and employers are also used as a factor to assess the appropriateness of course offerings. This program is in line with the National Nanotechnology Policy and Strategy (DSNN) 2021-2030 and the National Policy of Science, Technology and Innovation (NPSTI) 2021-2030, with the aim to create a dynamic ecosystem and to drive Malaysia towards a high-income economy by 2030.
List of Subjects :
Nanotechnology
Research Methodology
Dissertation
Design, Synthesis and Fabrication
Characterization Techniques
Nanosafety and Health
Nanoelectronics
Nanomedicine
Nanobiotechnology
Environmental Nanobiotechnology
Nanobiotechnology in Food and Agri-culture
Core Subjects (36 credit hours)
Elective Subjects (6 credit hours) (Select 2)
Total Credit Hour : 42
Programme Duration
One and a half year
Career Opportunities
Scientist, Technologist, R&D engineer, industrial expert and consultant, startup founder, chief technology officer, nanoscience and nanotechnology educator, specialist at industry and governmental agency.
For more information:
https://nanocat.um.edu.my/nanotechnology
nanocat@um.edu.my
+603-7967 6959 Or
Assoc. Prof. Dr. Ong Boon Hoong (Program Coordinator)
bhong@um.edu.my
+603-7967 7022 (ext: 2930)
Scan to apply:


NANOCAT
MALAYSIAN NANO
AN INTERNATIONAL
JOURNAL
Volume 4
2024
ISSUE 1
NANOCAT
Malaysian Catalysis
An International Journal
MALAYSIAN
CATALYSIS
AN INTERNATIONAL JOURNAL
Volume 3
2023
ISSUE 1


NANOCAT PRODUCTS
https://nanocat.um.edu.my
Nanotechnology and Catalysis Research Center (NANOCAT), since 2012 instrumental in spearheading Research, Development & Commercialization of catalysis and nanotechnology towards sustainability and green technology for all interested parties.
Looking forward to Profitable Partnership
Prof. Dr. Mohd Rafie Johan (Director)
Phone: + 603-7967 6959; Email: mrafiej@um.edu.my
Dr. Leo Bey Fen (Product Specialist)
Phone: + 603-7967 7515; Email: beyfenleo@um.edu.my
HIGH PRECISION PRODUCTION WITH ADVANCED QUALITY CONTROL INSTRUMENTS
Email us at ts_nanocat@um.edu.my or contact us at +603-7967 6273 for a quotation.
Other enquiries > PIC: Durga Devi Suppiah (durgadevi@um.edu.my or +60 12-332 2750)
NanoCAT™ IronAgro
> IONP for Plant Iron Supplement. Absorbable by plant (foliar or root) with less loss and enhanced Fe ion bioavailability.
NanoCAT™ IronCoat
> IONP for Paint Iron Pigment with micaceous iron oxide use as a protective coating on steel structures and Polymer Coating with Metal and Magnetic properties.
NanoCAT™ IronMedic
> IONP for Contrast Agents in magnetic resonance imaging (MRI) and magnetic particle imaging (MPI).
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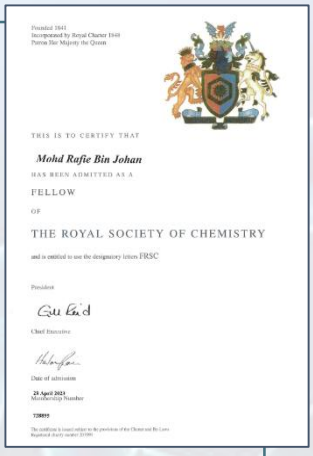
ts_nanocat@um.edu.my
Nanotechnology and Catalysis Research Centre
nanocat.um

AWARDS & DISTINCTIONS

APEC Science Prize for Innovation, Research and Education (ASPIRE) 2023 National Winner

World Top 2% Scientists, Single Year Citation Impact, according to Stanford University



Fellow Royal Society of Chemistry (UK)

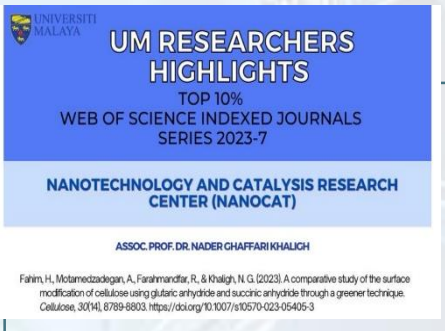
Highly Cited Papers 2023

Best Oral Presentation Award, Budapest, Hungary

World's Top 2% Scientists, Career-Long Citation Impact, according to Standford University

Top Cited Article, ChemBioEng Reviews

Top Cited Article, Helvetica Chimica Acta



Top 10% WoS Indexed Journals series 2023-7

Bronze Award - Carnival of Research and Innovation (CRI 2023)

Professor Dr. mohd Rafie Bin Johan atas kenaikan pangkat ke jawatan Profesor Gred Khas B (VK6)

Pentadbir Harapan in Anugerah Pentadbir Universiti Malaya 2023

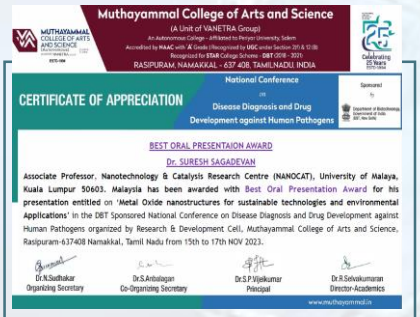
AWARDS & DISTINCTIONS

Best Paper Award ICONMAR 2023

Gold Award at the International Virtual Expo of Innovation Product and System Design 2023

Young achiever Award

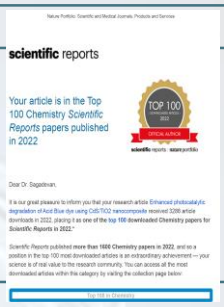
International Association of Advanced Material (IAAM) Scientist Medal



Best oral presentation

Best oral presentation

Best oral presentation



Top 100 Chemistry Scientific Reports

Class of 2023

Highly cited special Issues

Institute of Physics (IOP) Trusted Reviewer Award

Bachelor of Engineering (Chemical)

Dr Nurhidayatullaili Muhd Julkapli and Dr Yasmin Abdul Wahab for publication in TOP 10% Web of Science Indexrd Journals

Mohamad Safuan Kamaruddin dari NANOCAT sebagai pemenang Poster Terbaik Pertandingan Kreatif Kesedaran Mental Sedunia Antara PTJ Universiti Malaya

AWARDS & DISTINCTIONS

Associate Professor Dr Juan Joon Ching for being promoted to Professor (VK7)

Gold Award at MTE 2023, 16 - 18 March 2023, PWTC

Professor Dr Suresh Sagadevan for the Academic Staff with The Most Highly Cited Paper (Science)

Miss Wong Whui Dhong being awarded Yang Dipertuan Agong Scholarship

BEST PAPER AWARDS for the 2nd Postgraduate Students Research Paper Competition

Mohammad Al Mamun for the Consolation Prize Winner

Pn Nuramera Binti Pa dek diatas kenaikan pangkat Pegawai Sains Kanan C44

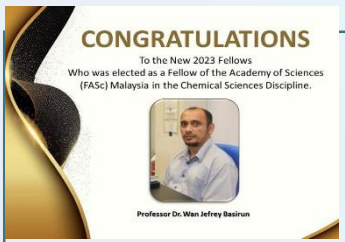
BEST PAPER AWARDS for the "2nd Postgraduate Students Research Paper Competition

Ms. Lia Zaharani for winning 3rd place in the Materials Lecture Competition (MLC) 2023

Best Paper Award (IC Design), IEEE 2023

Best Paper Award (Devides), IEEE 2023

Associate Professor Dr. Lai Chin Wei for winning the National APEC Science Prize for Innovation, Research, and Education (ASPIRE) 2023.



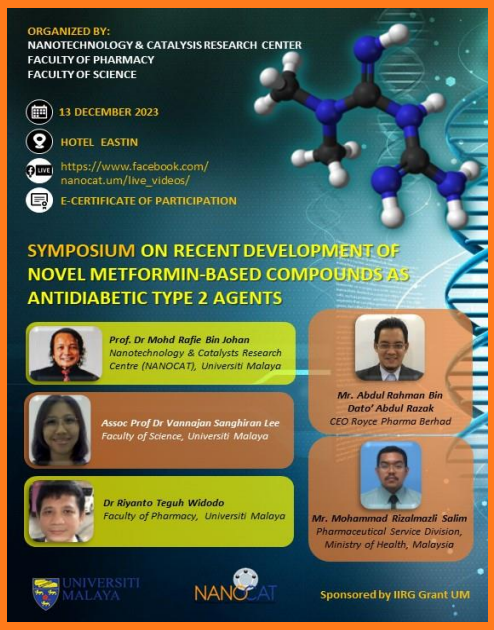
Fellow of the Academy of Sciences (FASc) Malaysia in the Chemical

Fellow of the Royal Society of Chemistry (FRSC)

SEMINAR


NATIONAL SCIENCE WEEK
Ekspo Nanoteknologi Nanocat
24 - 26 July 2023
Online, 9 a.m. - 4 p.m.
24 July 2023, 9 am -10 am
24 July 2023, 10.30 am -12.30 pm
24 July 2023, 2 pm - 4 pm
25 July 2023, 10 am-12 pm
26 July 2023, 10 am-12 pm
26 July 2023, 2 pm - 4 pm
2nd POSTGRADUATE STUDENTS RESEARCH PAPER Competitions
July – August 2023
PUBLISH YOUR PAPER AND WIN CASH PRIZES


ISSTEC
4th International Seminar on Science Technology
Faculty of Mathematics & Natural Sciences
Indonesia, 19 September 2023
Keynote Speaker
Invited Speaker
Theme: New Innovation in Science, Technology & Data Analysis
Sub Topics
REGISTRATION FEE & PAYMENT
SUBMISSION & REGISTRATION:
ARTICLE PUBLICATIONS
CONTACT
IMPORTANT DATES
isstec.uii.ac.id

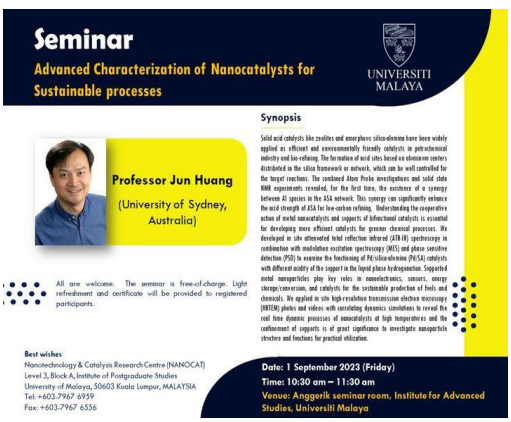

ORGANIZED BY:
NANOTECHNOLOGY & CATALYSIS RESEARCH CENTER
FACULTY OF PHARMACY
FACULTY OF SCIENCE
13 DECEMBER 2023
HOTEL EASTIN
https://www.facebook.com/nanocat.um/live_videos/
E-CERTIFICATE OF PARTICIPATION
SYMPOSIUM ON RECENT DEVELOPMENT OF NOVEL METFORMIN-BASED COMPOUNDS AS ANTIDIABETIC TYPE 2 AGENTS
Prof. Dr Mohd Rafie Bin Johan
Assoc Prof Dr Vannajan Sanghiran Lee
Dr Riyanto Teguh Widodo
Mr. Abdul Rahman Bin Dato' Abdul Razak
Mr. Mohammad Rizalmazli Salim
Sponsored by IIRG Grant UM


Seminar
Colloidal metal nanoparticles prepared by pulse laser ablation and their application as antibacterial agent
Dr. Ali Khumaeni
(Diponegoro University, Indonesia)
Synopsis
Date: 23rd May 2023 (Tuesday)
Time: 2.30 – 3.30 pm
Venue: Auditorium, Ground floor, Institute for Advanced Studies, Universiti Malaya


Invited Lecture & Webinar Series
"Progress in polymeric hybrid nanomaterials for advanced technologies: Synthesis, Properties and Application"
Professor Ali Farzi
Full Professor of Polymer Engineering
Hakim Sabzevari University
Iran
9 January 2023 (Monday)
3:30 pm – 4:30 pm Malaysia Time
11:00 am – 12:00 pm Iran Time
FREE
Microsoft Teams
Microsoft Teams https://shorturl.at/eCX46
Organisers:


Our Special Guests
Topic 01 Overview on Nanotechnology & Current Progress of Nanotechnology
Topic 02 National Nanotechnology Strategy and Policy (NNPS) 2021-2030 and National Nanotechnology – Technology & Product Roadmap 2021-2025
Register Now for FREE!
20 September 2023
From 10.00 am to 12.30 pm
Online Webinar Google Meet

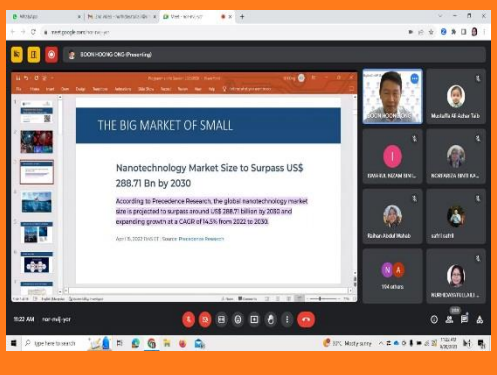

PATENTING FOR RESEARCHERS:
PROTECTING IDEAS, DRIVING INNOVATIONS
Meet Our Speaker
Ramakrishna Damodharan
Managing Director
ADIPVEN (M) SDN BHD
DATE: 3 MAY 2023
TIME: 2PM - 5PM
VENUE: ANGGERIK SEMINAR ROOM, LEVEL 3, BLOCK D, INSTITUTE FOR ADVANCED STUDIES
FOOD & BEVERAGES PROVIDED
E-CERTIFICATE TO BE PROVIDED
FREE
Registration : https://tinyurl.com/umip101
Who Should Attend? HODs, Researchers, Lecturers, Postgraduate Students, UM Staff, Industry Partners


Seminar
Advanced Characterization of Nanocatalysts for Sustainable processes
Professor Jun Huang
(University of Sydney, Australia)
Synopsis
Date: 1 September 2023 (Friday)
Time: 10:30 am – 11:30 am
Venue: Anggerik seminar room, Institute for Advanced Studies, Universiti Malaya


Seminar
Advanced nanomaterials for energy and environmental applications
Professor Salam Titinchi
(University of the Western Cape, South Africa)
Biodata:
Date: 19 December 2023 (Tuesday)
Time: 3.00 pm – 4.00 pm
Venue: Anggerik seminar room, Institute for Advanced Studies, Universiti Malaya


ORGANIZED BY: Faculty of Applied Sciences (FSG) Kampus Shah Alam, Cawangan Negeri Sembilan, Cawangan Sarawak, Cawangan Pahang, Cawangan Perlis
03 December 2023 (Sunday)
WEBEX Link Scan Me
e-Certificate of Participation
INTERNATIONAL GUEST LECTURE SEMINAR
Prof. Dr. Mohd. Rafie Johan
NANOTECHNOLOGY AND CATALYSIS RESEARCH CENTRE
UNIVERSITI MALAYA, MALAYSIA
TOPIC: QUANTUM MECHANICS PART I
Assoc. Prof. Dr. Nazarudin
CHEMICAL ENGINEERING DEPARTMENT
UNIVERSITAS JAMBI, INDONESIA
TOPIC: QUANTUM MECHANICS PART II
ChM Dr. Hussein Hanibah
FACULTY OF APPLIED SCIENCES
UITM DENGKIL, MALAYSIA
TOPIC: SOLUTION OF ELECTROLYTES
Collaborative Teaching Model 2
CHM524 ADVANCED PHYSICAL CHEMISTRY


WORKSHOP
On Writing and publishing papers in High Impact Factor Journals -Tips and Resources
14th September 2023 (Thursday)
Cube 2, Block D, Level 4, Institute of Advanced studies Universiti Malaya, Malaysia
Scope of the Workshop:
ChM. Ts. Dr. LIM JUN WEI
Dr.Suresh Sagadevan,FRSC
Speakers:
Professor Saidur Rahman
08.30-09.00 am Registration
09.00-09.15 am Opening speech by Prof. Dr. Mohd Rafie Johan, FRSC
09.15-10.30 am Session-I: Improving writing skills in publishing high impact journals by Professor Saidur Rahman
10.30-11.00 am Morning tea break
11.00-12.00 pm Session-II: Preparing to Publish a Research Paper in High Impact Journal by ChM. Ts. Dr. LIM JUN WEI
12.00-1.00 pm Lunch break
1.30-02.30 pm Session -III: Peer review process and Publication Ethics by Assoc. Prof. Dr Suresh Sagadevan, FRSC
02.30-03.30 Evening tea & collection of certificate at the registration table
Register Here: https://forms.gle/8Nk9qL1GfhHsW4FK6
Registration Fee
Student: RM 80
Participant : RM 150
*Certificate and food will be provided
PAYMENT METHOD
LIMITED TO 50 PARTICIPANTS ONLY
First come first served
Who should attend? All PG students, researchers & lectures


THE BIG MARKET OF SMALL
Nanotechnology Market Size to Surpass US$ 288.71 Bn by 2030
According to Precedence Research, the global nanotechnology market size is projected to surpass around US$ 288.71 billion by 2030 and expanding growth at a CAGR of 14.5% from 2022 to 2030.

COLLABORATORS

Intensification in networking and research collaboration were formalized through 15 MOUs (2 national and 13 international), 6 MOAs (5 national and 1 international). The co-operation has given mileage for joint publications in WoS journals with high impact.

COLLABORATORS

MOU

International

- University of the Western Cape
- Iraqi Forum for Intellectures and Academics
- Peace University
- Wajufo Investment Holdings Co. Ltd
- University of Sydney
- ProNEXO Engineering Consultancy
- Cihan University Sulaimaniya
- GLA University
- Corporation of Research and Industrial Development
- Tikrit University
- Institute for Color Science and Technology
- Kharazmi University
- Sari Agricultural Sciences & Natural Resources University

National

- Universiti Teknologi Petronas
- Universiti Teknologi Mara











MOA

International

- Thai Kiwa Chemical Co. Ltd

National

- Sunway University
- International Islamic University Malaysia
- Universiti Sains Malaysia
- Global Envdk Sdn. Bhd.
- Nanoverify Sdn Bhd

PUBLICATIONS 2023

No	Article Title	Authors	Journal Name	Quartile
1	A comprehensive review and clinical guide to molecular and serological diagnostic tests and future development: In vitro diagnostic testing for COVID-19	Areerob Y., Sagadevan S., Oh W.-C.	Nanotechnology Reviews	Q1
2	A facile and eco-friendly synthesis of Mn-doped CaCO3/PMMA nanocomposite for highly efficient supercapacitor in energy storage applications	Ramasamy, V., Sathishpriya, T., Thenpandiyan, E., Suresh, G., Sagadevan, S.	Inorganic Chemistry Communications	Q1
3	Advancement in thermophotovoltaic technology and nanoparticle incorporation for power generation	Khairul Azri A.A., Mohd Jasni M.S., Wan Muhamad Hatta S.F., Islam M.A., Abdul Wahab Y., Mekhilef S., Ker P.J.	Solar Energy	Q1
4	An optimistic approach to nanotechnology in Alzheimer's disease management: An overview	Tiwari, V., Tiwari, A., Sharma, A., Kumar, M., Kaushik, D., Sagadevan, S.	Journal of Drug Delivery Science and Technology	Q1
5	Biomass derived green carbon dots for sensing applications of effective detection of metallic contaminants in the environment	Bosu S., Rajamohan N., Sagadevan S., Raut N.	Chemosphere	Q1
6	Comprehensive utilization and biomedical application of MXenes - A systematic review of cytotoxicity and biocompatibility	Sagadevan S., Oh W.-C.	Journal of Drug Delivery Science and Technology	Q1
7	Controlled Growth of Semiconducting ZnO Nanorods for Piezoelectric Energy Harvesting-Based Nanogenerators	Abubakar S., Tan S.T., Liew J.Y.C., Talib Z.A., Sivasubramanian R., Vaithilingam C.A., Indira S.S., Oh W.-C., Siburian R., Sagadevan S., Paiman S.	Nanomaterials	Q1
8	Correlation on synthesis design and surface modification towards properties and applications of carbon nanofibers and carbon nanofibers based nanocomposites	Gul A., Ghaffari Khaligh N., Nordin N., Ma'amor A., Muhd Julkapli N.	Polymer Composites	Q1
9	Eco-friendly green synthesis approach and evaluation of environmental and biological applications of iron oxide nanoparticles	Suppiah D.D., Julkapli N.M., Sagadevan S., Johan M.R.	Inorganic Chemistry Communications	Q1
10	Efficient antimicrobial activity for combustion-derived CeO2 quantum dots	Fathima Khyrun S.M., Sagadevan S., Jegatha Christy A.	Inorganic Chemistry Communications	Q1
11	Efficient photocatalytic activity of chitosan/tin oxide nanocomposite for environmental remediation	Krishna Veni K., Agalya S., Kavitha R., Fatimah I., Sagadevan S., Nehru L.C.	Inorganic Chemistry Communications	Q1
12	Electrochemical DNA-nano biosensor for the detection of cervical cancer-causing HPV-16 using ultrasmall Fe3O4-Au core-shell nanoparticles	Rasouli E., Basirun W.J., Johan M.R., Rezayi M., Mahmoudian M.R., Poenar D.P.	Sensing and Bio-Sensing Research	Q1
13	Encapsulated paracetamol-based eutectic solvents for the treatment of low-grade palm oil mixed with microalgae oil	Hayyan A., Qing F.L.W., Salleh M.Z.M., Basirun W.J., Hamid M.D., Saleh J., Aljohani A.S.M., Alhumaydhi F.A., Zulkifli M.Y., Abdulmonem W.A., Yeow A.T.H., Nor M.R.M., Hashim M.A., Al-Sabahi J.N.	Industrial Crops and Products	Q1
14	Enhancement of photocatalytic and sonophotocatalytic degradation of chitosan-ZnSnO3 nanocomposite for environmental remediation of emerging pollutants	Krishna Veni K., Kavitha R., Fatimah I., Sagadevan S., Nehru L.C.	Inorganic Chemistry Communications	Q1
15	Enhancing oxygen exchange kinetics of solid oxide fuel cell cathode: Unleashing the potential of higher order Ruddlesden-Popper phase surface modification	Saher S., Tan C.Y., Ramesh S., Yap B.K., Ong B.H., Al-Furjan M.S.H.	Journal of Power Sources	Q1
16	Enriched second-harmonic generation in meta-phase barium titanate nanostructures synthesized by sol-gel hydrothermal method	Mahalakshmi S., Mayandi J., Sagadevan S., Ragavendran V., Manikandan K., Arumugam S., Pearce J.M., Venkatachalapathy V.	Journal of Alloys and Compounds	Q1
17	Environmentally benign and biocompatible CuO@Si core-shell nanoparticles: As electrochemical L-cysteine sensor, antibacterial and anti-lung cancer agents	Gowtham S.M., Dhivya R., Muthulakshmi L., Sureshkumar S., Ashraf M., Pandi M., Mayandi J., Annaraj J., Sagadevan S.	Ceramics International	Q1
18	Evaluation of Folate-Functionalized Nanoparticle Drug Delivery Systems—Effectiveness and Concerns	Ibrahim M.A.I., Othman R., Chee C.F., Ahmad Fisol F.	Biomedicines	Q1
19	Exploring graphene and its potential in delivery of drugs and biomolecules	Saharan R., Paliwal S.K., Tiwari A., Tiwari V., Singh R., Beniwal S.K., Dahiya P., Sagadevan S.	Journal of Drug Delivery Science and Technology	Q1
20	Exploring the impact of oxidant ratio on polypyrrole properties: Electrical, optical, and adsorption behaviour	Pang A.L., Arsad A., Rezaei Ardani M., Ismail N.E., Julkapli N.M., Ahmadipour M.	Inorganic Chemistry Communications	Q1
21	Genome shuffling for phenotypic improvement of industrial strains through recursive protoplast fusion technology	Hospet, R., Thangadurai, D., Cruz-Martins, N., Sangeetha, J., Appaiah, K.A.A., Chowdhury, Z.Z., Bedi, N., Soytong, K., Tawaha, A.R.M.A., Jabeen, S., Tallur, M.M.	Critical Reviews in Food Science and Nutrition	Q1

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No	Article Title	Authors	Journal Name	Quartile
22	Green synthesis of CuO nanoparticles for biological applications	Murugan B., Rahman, M.Z., Fatimah, I., Lett, J.A., Annaraj, J., Kaus, N.H.M. Al-Anber, M.A., Sagadevan, S.	Inorganic Chemistry Communications	Q1
23	Highly effective interlayer expanded MoS2 coupled with Bi2WO6 as p-n heterojunction photocatalyst for photodegradation of organic dye under LED white light	Lai M.T.L., Lee K.M., Yang T.C.K., Lai C.W., Chen C.-Y., Johan M.R., Juan J.C.	Journal of Alloys and Compounds	Q1
24	Highly efficient Bi2O2CO3 coupled with interlayer expanded MoS2 photocatalyst with oxygen vacancy mediated direct Z-scheme charge transfer for photocatalytic degradation of organic pollutant	Lai M.T.L., Yang T.C.K., Lai C.W., Chen C.-Y., Johan M.R., Lee K.M., Juan J.C.	Journal of Environmental Chemical Engineering	Q1
25	Highly efficient photocatalytic degradation of methylene blue dye over Ag2O nanoparticles under solar light irradiation	Sagadevan S., Alshahateet S.F., Anita Lett J., Fatimah I., Poonchi Sivasankaran R., Kassegn Sibhatu A., Leonard E., Le M.-V., Soga T.	Inorganic Chemistry Communications	Q1
26	Hydrothermal-assisted synthesis of reduced graphene oxide/zinc oxide nanocomposite for ultrashort pulse generation in 1.5 μm and 2.0 μm spectral regions	Ahmad H., Loganathan K., Yusoff N., Rahman Marlinda A.	Optics and Laser Technology	Q1
27	Kappa-Carrageenan Modified Polyurethane Foam Scaffolds for Skeletal Muscle Tissue Engineering	Naureen B., Ang B.C., Muhamad F., Haseeb A.S.M.A., Basirun W.J.	Journal of Polymers and the Environment	Q1
28	Loading of Silver (I) Ion in L-Cysteine-Functionalized Silica Gel Material for Aquatic Purification	Al-Anber M.A., Al Ja'afreh M., Al-Momani I.F., Hijazi A.K., Sobola D., Sagadevan S., Al Bayaydah S.	Gels	Q1
29	Magnetic-guided targeted delivery of zerumbone/SPION co-loaded in nanostructured lipid carrier into breast cancer cells	Tan L.K.S., How C.W., Low L.E., Ong B.H., Loh J.S., Lim S.-Y., Ong Y.S., Foo J.B.	Journal of Drug Delivery Science and Technology	Q1
30	Mesoporous semi-ionic F-doped g-C3N4 as efficient photocatalyst for tetracycline removal under visible light	Phoon, B.L., Yang, T.C.-K., Leo, B.F., Lai, C.W., Phang, S.W., Juan, J.C.	Environmental Technology & Innovation	Q1
31	Nanofood Process Technology: Insights on How Sustainability Informs Process Design	Hessel, V., Escribà-Gelonch, M., Schmidt, S., Tran, N.N., Davey, K., Al-Ani, L.A., Julkapli, N.M., Wahab, Y.A., Khalil, I., Woo, M.W., Gras, S.	ACS Sustainable Chemistry & Engineering	Q1
32	Nature-derived polymers and their composites for energy depository applications in batteries and supercapacitors: Advances, prospects and sustainability	Ahmed S., Sharma P., Bairagi S., Rumjit N.P., Garg S., Ali A., Lai C.W., Mousavi S.M., Hashemi S.A., Hussain C.M.	Journal of Energy Storage	Q1
33	Nickel oxide decorated reduced graphene oxide synthesized using single bioreductor of Pometia pinnata leaves extract as photocatalyst in tetracycline photooxidation and antibacterial agent	Fatimah I., Widya Citradewi P., Purwiandono G., Hidayat H., Sagadevan S.	Inorganic Chemistry Communications	Q1
34	Overview of municipal solid wastes-derived refuse-derived fuels for cement co-processing	Tihin G.L., Mo K.H., Onn C.C., Ong H.C., Taufiq-Yap Y.H., Lee H.V.	Alexandria Engineering Journal	Q1
35	Photocatalytic degradation of triclocarban in aqueous solution using a modified zeolite/TiO2 composite: kinetic, mechanism study and toxicity assessment	Arifin S.N.H., Radin Mohamed R.M.S., Al-Gheethi A., Lai C.W., Gopalakrishnan Y., Hairuddin N.D., Vo D.-V.	Environmental Science and Pollution Research	Q1
36	Photocatalytic dye degradation efficiency and reusability of aluminium substituted nickel ferrite nanostructures for wastewater remediation	Ramadevi P., Shanmugavadivu R., Venkatesan R., Mayandi J., Sagadevan S.	Inorganic Chemistry Communications	Q1
37	Photo-triggered antibacterial and catalytic activities of solution combustion synthesized CeO2/NiO binary nanocomposite	Fathima Khyrun, S.M., Jegatha Christy, A., Mayandi, J., Sagadevan, S.	Inorganic Chemistry Communications	Q1
38	Physicochemical and photocatalytic activity of needle-like γ-FeOOH/Halloysite	Fatimah, I., Purwiandono, G., Ningrum, H.S., Sagadevan, S.	Inorganic Chemistry Communications	Q1
39	Polymer-enhanced perovskite oxide-based photocatalysts: a review	Thien G.S.H., Chan K.-Y., Marlinda A.R., Yap B.K.	Nanoscale	Q1
40	Prospective features of functional 2D nanomaterial graphene oxide in the wound healing process	Chandrasekaran R., Krishnan M., Bupesh G., Chacko S., Gawade O., Hasan S., George E., Vijayakumar T.S., Sundaram M., Sagadevan S.	Journal of Drug Delivery Science and Technology	Q1
41	Rapid and facile chemical synthesis of Fe3O4/biochar nanocomposite for the adsorptive removal of fluoroquinolones from aqueous solution	Kassim M.A.B.M., Kaus N.H.M., Imam S.S., Sagadevan S., Salaeh S.	Inorganic Chemistry Communications	Q1
42	Recent advancements in polymer matrix nanocomposites for bone tissue engineering applications	Sagadevan S., Schirhagl R., Rahman M.Z., Bin Ismail M.F., Lett J.A., Fatimah I., Mohd Kaus N.H., Oh W.-C.	Journal of Drug Delivery Science and Technology	Q1

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No	Article Title	Authors	Journal Name	Quartile
43	Recent advances in photocatalytic removal of sulfonamide pollutants from waste water by semiconductor heterojunctions: a review	Rana, S., Kumar, A., Dhiman, P., Mola, G.T., Sharma, G., Lai, C.W.	Materials Today Chemistry	Q1
44	Recent biomedical advancements in graphene oxide and future perspectives	Patil, S., Rajkuberan, C., Sagadevan, S.	Journal of Drug Delivery Science and Technology	Q1
45	Revolutionizing biodiesel production: A breakthrough synthesis and characterization of bismuth ferrite nanocatalysts for transesterification of palm and waste cooking oil	Razuki A., Haida Mohd Kaus N., Sagadevan S., Salaeh S., Lokman Ibrahim M., Mustaffa Al Bakri Abdullah M.	Fuel	Q1
46	Sensor to Electronics Applications of Graphene Oxide through AZO Grafting	Sagadevan S., Rahman M.Z., Leonard E., Losic D., Hessel V.	Nanomaterials	Q1
47	Surface analysis and thermal behavior of the functionalized cellulose by glutaric anhydride through a solvent-free and catalyst-free process	Fahim H., Motamedzadegan A., Farahmandfar R., Khaligh N.G.	International Journal of Biological Macromolecules	Q1
48	Surface Functionalization of Sugarcane-Bagasse-Derived Cellulose Nanocrystal for Pickering Emulsion Gel: Microstructural Properties and Stability Efficiency	Teo S.H., Ching Y.C., Fahmi M.Z., Lee H.V.	Gels	Q1
49	Sustained power output from an algal biophotovoltaic (BPV) platform using selected marine and freshwater microalgae	Thong, C.-H., Ng, F.-L., Periasamy, V., Basirun, W.J., Kumar, G.G., Phang, S.-M.	Journal of Applied Phycology	Q1
50	Synergistic effects on BiFeO3 based cellulose acetate composite and efficient photocatalytic activities for wastewater treatment application	Izua Natasya Joaspizi J., Atilia Athira Zaahari N., Sagadevan S., Kobayashi T., Adnan R., Shehu Imam S., Amirul Ramlan M., Haida Mohd Kaus N.	Inorganic Chemistry Communications	Q1
51	Synthesis and Staphylococcus aureus biofilm inhibitory activity of indolenine-substituted pyrazole and pyrimido[1,2-b]indazole derivatives	Yap C.H., Ramle A.Q., Lim S.K., Rames A., Tay S.T., Chin S.P., Kiew L.V., Tiekink E.R.T., Chee C.F.	Bioorganic and Medicinal Chemistry	Q1
52	TaqMan multiplex qPCR for detecting animal species in meat and meat products: Development, recent advances and future prospects	Hossain M.A.M., Zainal Abidin S.A.S., Bujang A., Taib M.N., Sagadevan S., Johan M.R., Ahmad Nizar N.N.	Food Control	Q1
53	Targeted cysteine and glutathione detection in extra/intracellular systems by copper-based fluorescent imaging probes	Nagendraraj, T., Priya, S.V., Annaraj, J., Sagadevan, S.	Coordination Chemistry Reviews	Q1
54	The Role of Polymers in Halide Perovskite Resistive Switching Devices	Thien G.S.H., Chan K.-Y., Marlinda A.R.	Polymers	Q1
55	The synergy of zinc oxide supported magnetic cobalt ferrite: Efficient boosting the peroxymonosulfate activation towards the refractory organic pollutants elimination	Le P.-N.-M., Tran H.-T., Huynh N.-D.-T., Truong C.-H., Ngo T.-H., Dang B.-T., Luan V.H., Tseng T.-H., Johan M.R., Sagadevan S., Le M.-V.	Journal of Alloys and Compounds	Q1
56	Utilization of liquid epoxidized natural rubber as prepolymer and crosslinker in development of UV-curable palm oil-based alkyd coating	Yong, M.Y., Basirun, W.J., Sarih, N.M., Md. Shalauddin, Lee, S.Y., Ang, D.T.-C.	Reactive and Functional Polymers	Q1
57	WO3 dispersed on a titanium porous clay heterostructure as a highly efficient visible light-active photocatalyst	Fatimah I., Yahya A., Purwiandono G., Sagadevan S.	Inorganic Chemistry Communications	Q1
58	A comparative study of the surface modification of cellulose using glutaric anhydride and succinic anhydride through a greener technique	Fahim, H., Motamedzadegan, A., Farahmandfar, R., Ghaffari Khaligh, N	Cellulose	Q1
59	Curcuminoid Nanovesicles as Advanced Therapeutics	Abbo H.S., Yufanyi D.M., Shah T., Khaligh N.G., Chinnam S., Efferth T., Titinchi S.J.J	ChemBioEng Reviews.	Q1

No	Article Title	Authors	Journal Name	Quartile
1	A novel and simple approach of rare earth ions (Y3+ and La3+) decorated nano calcium carbonate/ polyethylene glycol for photocatalytic degradation of organic pollutants in wastewater	Ramasamy, V., Thenpandiyan, E., Suresh, G., Sathishpriya, T., Sagadevan, S.	Optical Materials	Q2
2	A Novel Computational Platform for Steady-State and Dynamic Simulation of Dual-Chambered Microbial Fuel Cell	Naseer M.N., Zaidi A.A., Dutta K., Jaafar J., Wahab Y.A., Cai Y.	Journal of the Electrochemical Society	Q2
3	An Overview of Photocatalytic Membrane Degradation Development	Binazadeh M., Rasouli J., Sabbaghi S., Mousavi S.M., Hashemi S.A., Lai C.W.	Materials	Q2
4	Bimetallic metal organic framework anchored multi-layer black phosphorous nanosheets with enhanced electrochemical activity for paracetamol detection	Shalauddin M., Akhter S., Basirun W.J., Lee V.S., Marlinda A.R., Ahmed S.R., Rajabzadeh A.R., Srinivasan S.	Electrochimica Acta	Q2

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No	Article Title	Authors	Journal Name	Quartile
5	Biomass-sourced activated carbon on CdSNPs@BBFCO matrix for polymer degradation in aqueous plastic samples and the textile effluent	Murugan B., Mahalingam U., Ramasamy P., Sagadevan S.	International Journal of Environmental Science and Technology	Q2
6	Corrosion inhibition of particulate and tubular polyaniline in polyvinyl butyral for mild steel protection	Abdul Rahman F., Basirun W.J., Johan M.R., Ghazali N.	Materials Letters	Q2
7	Coupling of Heteroarene and Arenol via Nickel-Catalyzed C−H/C−OH Activation	Hung C.-H., Wang T.-H., Yap G.P.A., Juan J.C., Ong T.-G.	ChemCatChem	Q2
8	Differential Pulse Voltammetric Tuning of the Screen-Printed Carbon Electrode Surface to Enhance the Electrochemical Performance and Multiplex Detection	Mamun, M.A., Wahab, Y.A., Hossain, M.A.M., Hashem, A., Hamizi, N.A., Chowdhury, Z.Z., Hattad, S.F.W.M., Badruddin, I.A., Kamangar, S., Johan, M.R.	Journal of the Electrochemical Society	Q2
9	Effect of graphene nanoplatelet-infused natural rubber film composite on morphology, spectral, and electrochemical properties	Marlinda A.R., Shalauddin M., Rajandran V., Saifizul A.A., Azam A.D., Ahmad M.I.	Journal of Materials Science: Materials in Electronics	Q2
10	Effect of Metal Atom in Zeolitic Imidazolate Frameworks (ZIF-8 & 67) for Removal of Dyes and Antibiotics from Wastewater: A Review	Pouramini Z., Mousavi S.M., Babapoor A., Hashemi S.A., Lai C.W., Mazaheri Y., Chiang W.-H.	Catalysts	Q2
11	Effect of Red Mud and Rice Husk Ash-Based Geopolymer Composites on the Adsorption of Methylene Blue Dye in Aqueous Solution for Wastewater Treatment	Nguyen K.D., Thu T.T., Tran A.T.H., Le O.T.K., Sagadevan S., Mohd Kaus N.H.	ACS Omega	Q2
12	Electric and optoelectronic balances of silicon photodetectors coupled with colloid carbon nanodots	Hsiao P.-H., Gao Z.-X., Juan J.-C., Lin Y.-P., Chen S.-Y., Chen C.-Y.	Materials Letters	Q2
13	Enhanced photocatalytic degradation of methylene blue from aqueous solution using green synthesized ZnO nanoparticles	Ramasubramanian A., Selvaraj V., Chinnathambi P., Hussain S., Ali D., Kumar G., Balaji P., Sagadevan S.	Biomass Conversion and Biorefinery	Q2
14	Enhancement of Catalytic Activity on Crude Palm Oil Hydrocracking over SiO2/Zr Assisted with Potassium Hydrogen Phthalate	Hasanudin, H., Asri, W.R., Mara, A., Muttaqii M.A., Maryana, R., Rinaldi, N., Sagadevan, S., Zhang, Q., Fanani, Z., Hadiah, F.	ACS Omega	Q2
15	Enzymatic hydrolysis for the removal of 3-monochloropropanediol esters in edible oils using Candida rugosa lipase in the presence of deep eutectic solvents and nanocellulose	Putra S.S.S., Basirun W.J., Hayyan A., Elgharbawy A.A.M.	Biochemical Engineering Journal	Q2
16	Evaluation of Photocatalytic Activity and Electrochemical Properties of Hematite Nanoparticles	Sagadevan, S., Sivasankaran, R.P., Lett, J.A., Fatimah, I., Weldegebrieal, G.K., Leonard, E., Le, M.-V., Soga, T.	Symmetry	Q2
17	Gallium nitride-polyaniline-polypyrrole hybrid nanocomposites as an efficient electrochemical sensor for mebendazole detection in drugs	Munusamy S., Sivasankaran R.P., Sivaranjan K., Sabhapathy P., Narayanan V., Mohammad F., Sagadevan S.	Electrochimica Acta	Q2
18	Graphene as a Lubricant Additive for Reducing Friction and Wear in Its Liquid-Based Form	Marlinda A.R., Thien G.S.H., Shahid M., Ling T.Y., Hashem A., Chan K.-Y., Johan M.R.	Lubricants	Q2
19	Highly effective ashless and non-corrosive dimercaptobenzothiadiazole as multifunctional lubricant additives in naphthenic base oil	Ong C.L., Lai Y.C., Heidelberg T., Tang W.K., Lee V.S., Khaligh N.G.; Juan J.C.	RSC Advances	Q2
20	Hydrothermal Synthesis and Photocatalytic Activity of Mn3O4 Nanoparticles	Lett J.A., Alshahateet S.F., Fatimah I., Sivasankaran R.P., Sibhatu A.K., Le M.-V., Sagadevan S.	Topics in Catalysis	Q2
21	Hydrothermally synthesized titanium/hydroxyapatite as photoactive and antibacterial biomaterial	Fatimah I., Hidayat H., Citradewi P.W., Tamyiz M., Doong R.-A., Sagadevan S.	Heliyon	Q2
22	Innovative Metal-Organic Frameworks for Targeted Oral Cancer Therapy: A Review	Mousavi, S.M., Hashemi, S.A., Fallahi Nezhad, F., Binazadeh, M., Dehdashtijaromi, M., Omidifar, N., Ghahramani, Y., Lai, C.W., Chiang, W.-H., Gholami, A.	Materials	Q2
23	Mathematical Modelling and Optimization for Facile Synthesis of Structured Activated Carbon (ACs) from Adansonia kilima (Baobab) Wood Chips Integrating Microwave-Assisted Pyrolysis for the Elimination of Lead (II) Cations from Wastewater Effluents	Sellamuthu S., Chowdhury Z.Z., Khalid K., Shibly S.M., Rahman M.M., Rana M., Badruddin I.A., Khaleed H.M.T., Kamangar S., Johan M.R.B., Hussein M., Mitra A., Faisal A.N.	Molecules	Q2
24	Mechanical performance and fracture surface analysis of fatty acid-coated iron oxide-reinforced nitrile butadiene composites	Tiar O.H., Julkapli N.M.	Polymer Bulletin	Q2

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No	Article Title	Authors	Journal Name	Quartile
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29	New trends in nanobiotechnology	Show P.-L., Chew K.W., Ong W.-J., Varjani S., Juan J.C.	Beilstein Journal of Nanotechnology	Q2
30	Novel solution combustion synthesis of CeO2/CuO nanocomposite for photocatalytic and biological applications	Khyrun, S.M.F., Christy, A.J., Usha, R., Nehru, L.C., Suresh, S.	Optical Materials	Q2
31	Photocatalytic Disinfection of E. coli Using Silver-Doped TiO2 Coated on Cylindrical Cordierite Honeycomb Monolith Photoreactor Under Artificial Sunlight Irradiation	Pham N.-D., Thao N.H., Luan V.H., Hoang H.A., Sagadevan S., Ngo M.-T., Duong N.N.H., Le M.-V.	Topics in Catalysis	Q2
32	Process Technology and Sustainability Assessment of Wastewater Treatment	Tran N.N., Escriba-Gelonch M., Sarafraz M.M., Pho Q.H., Sagadevan S., Hessel V.	Industrial and Engineering Chemistry Research	Q2
33	Recent Advances in Metal-Organic Framework (MOF) Asymmetric Membranes/Composites for Biomedical Applications	Valizadeh Harzand F., Mousavi Nejad S.N., Babapoor A., Mousavi S.M., Hashemi S.A., Gholami A., Chiang W.-H., Buonomenna M.G., Lai C.W.	Symmetry	Q2
34	Simultaneous activation of aldehydes and methylamine liberation by 4,4'-trimethylenedipiperidine in the solid-state synthesis of N-methyl imines	Zaharani L., Ghafarikhaligh M., Titinchi S., Johan M.R., Khaligh N.G.	Research on Chemical Intermediates	Q2
35	Solar-driven photodegradation of synthetic dyes by ternary of titanium oxide-copper oxide-chitosan catalyst	Mohamed, S., Ma'amor, A., Abdullah, F.Z., Muhd Julkapli, N.	Journal of Physics and Chemistry of Solids	Q2
36	Study the crystal structure of 4,4′-(propane-1,3-diyl)dipiperidinium sulfate monohydrate and its hydrogen bond catalytic activity in the mechanochemical synthesis of BIMs	Zaharani L., Khaligh N.G.	Journal of Molecular Structure	Q2
37	Surface-silanised and alkoxylated micro-mesoporous Ni/hierarchical nanozeolites for oleic acid hydrodeoxygenation	Arumugam, M., Osatiashtiani, A., Wong, K.-L., Baharudin, K.B., Lai, S.Y., Safa-Gama, M., Lee, H.V., Kubička, D., Taufiq-Yap, Y.H.	Molecular Catalysis	Q2
38	Synthesis and characterization of a novel functionalized silica/polyacrylamide composite for advanced water-based drilling design	Koh, J.K., Lai, C.W., Johan, M.R., Gan, S.S., Chua, W.W.	Journal of Applied Polymer Science	Q2
39	Synthesis and characterization of two new 2,5-bis-cycloalkylsulfanyl-[1,3,4]thiadiazoles and study of the crystal structure, thermal behavior, and biological activities compared with bismuthiol	Basir N.F.A., Gorjian H., Johan M.R., Khaligh N.G.	Journal of Molecular Structure	Q2
40	The development of ZnO nanoparticle-embedded graphitic-carbon nitride towards triple-negative breast cancer therapy	Padmanabhan V.P., Sivashanmugam P., Mubashera S.M., Sagadevan S., Kulandaivelu R.	RSC Advances	Q2
41	The effect of morphology of polyaniline on photodegradation of reactive black 5 dyes	Khor S.-H., Lee M.L.-Y., Basirun W.J., Juan J.-C., Phang S.-W.	Polymer Bulletin	Q2
42	Towards sustainable green diesel fuel production: Advancements and opportunities in acid-base catalyzed H2-free deoxygenation process	Asikin-Mijan N., Juan J.C., Taufiq-Yap Y.H., Ong H.C., Lin Y.-C., AbdulKareem-Alsultan G., Lee H.V.	Catalysis Communications	Q2
43	Tuning lattice strain in Quasi-2D Au-rGO nanohybrid catalysts for dimethylphenylsilane solid state silylation to disiloxane	Amir M.N.I., Halilu A., Julkapli N.M., Ma'amor A.	Materials Science and Engineering B	Q2
44	Z-scheme NiO/g-C3N4 nanocomposites prepared using phyto-mediated nickel nanoparticles for the efficient photocatalytic degradation	Fatimah I., Sulistyowati R.Z., Wijayana A., Purwiandono G., Sagadevan S.	Heliyon	Q2
19	Investigation of extraction yield, chemical composition, bioactive compounds, antioxidant and antimicrobial characteristics of citron (Citrus medica L.) peel essential oils produced by hydrodistillation and supercritical carbon dioxide.	Gilani, F., Amiri Raftani, Z., Esmaeilzadeh Kenari, R., Khaligh, N.G.	Journal of Food Measurement and Characterization,	Q2

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21	Student exploration of the Henderson-Hasselbach equation and pH readings to determine the pK a value of 4,4 -trimethylenedipiperidine (TMDP)	Zaharani, L., Khaligh, N.G.	Chemistry Teacher International	Q2

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2	A Unique Oligonucleotide Probe Hybrid on Graphene Decorated Gold Nanoparticles Modified Screen-Printed Carbon Electrode for Pork Meat Adulteration	Hashem A., Marlinda A.R., Hossain M.A.M., Al Mamun M., Shalauddin M., Simarani K., Johan M.R.	Electrocatalysis	Q3
3	Advanced biopolymers for automobile and aviation engineering applications	Rahman M.Z., Rahman M., Mahbub T., Ashiquzzaman M., Sagadevan S., Hoque M.E.	Journal of Polymer Research	Q3
4	AMBIENT TEMPERATURE EFFECT ON SILICON PHOTOVOLTAICS UNDER SIMULATED ENVIRONMENTS	Abdulaziz T., Chan K.-Y., Thien G.S.H., Siow C.-L., Yap B.K., Marlinda A.R.	Jurnal Teknologi	Q3
5	Conversion of CO2 to Light Hydrocarbons by Using FeCx Catalysts Derived from Iron Nitrate Co-pyrolyzing with Melamine, Bulk g-C3N4, or Defective g-C3N4	To D.-T., Juan J.C., Tsai M.-H., Wang C.-H., Pao C.-W., Chen C.-L., Lin Y.-C.	Catalysis Surveys from Asia	Q3
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7	Eco-friendly green approach of nickel oxide nanoparticles for biomedical applications	Sagadevan S., Fatimah I., Anita Lett J., Rahman M.Z., Leonard E., Oh W.-C.	Open Chemistry	Q3
8	Effect of Hexamethylenetetramine of Zinc Oxide Nanowires Using Chemical Bath Deposition Method	Aris S.N.M., Azmi Z.H., Sagadevan S., Abubakar S., Siburian R., Paiman S.	Crystal Research and Technology	Q3
9	Effects of Alkoxy Chain Length and 1-Hydroxy Group on Anticolorectal Cancer Activity of 2-Bromoalkoxyanthraquinones	Mekzali N.W., Chee C.W., Abdullah I., Lee Y.K., Rashid N.N., Lee V.S., Othman R., Hashim N.M., Chee C.F.	Medicinal Chemistry	Q3
10	Effects of Concentration of Adipic Acid on the Electrochemical Migration of Tin for Printed Circuit Board Assembly	Goh, Y.S., Haseeb, A.S.M.A., Basirun, W.J., Wong, Y.H., Sabri, M.F.M., Low, B.Y.	Journal of Electronic Materials	Q3
11	Exploration of molecularly imprinted polymer (MIP) nanohybrid films as DNA sensors for the detection of porcine	Nawaz, N., Abu Bakar, N.K., Basirun, W.J., Shalauddin, M., Karman, S.B., Ibrahim, S.B., Mahmud, H.N.M.E.	Chemical Papers	Q3
12	Greener and scalable mechanosynthesis of bis(3-indolyl)methane as an example of versatile pharmaceutical scaffold: Is the mechanochemical technique a metal-free process?	Fahim H., Mihankhah P., Khaligh N.G.	Synthetic Communications	Q3
13	Heterogeneous photocatalysis of triclocarban and triclosan in greywater: a systematic and bibliometric review analysis	Arifin S.N.H., Mohamed R., Al-Gheethi A., Lai C.W., Yashni G.	International Journal of Environmental Analytical Chemistry	Q3
14	Improvement in Preparing and Separating Triacetin by the Combinatory Effect of Catalysis and In Situ Continuous Liquid–Liquid Extraction Technique	Zaharani L., Mihankhah P., Johan M.R., Khaligh N.G.	Catalysis Letters	Q3
15	Mesoporous Silica-Based Catalysts for Biodiesel Production: A Review	Fatimah, I., Fadillah, G., Sagadevan, S., Oh, W.-C., Ameta, K.L.	ChemEngineering	Q3
16	Removal of Azo Dyes from Aqueous Effluent Using Bio-Based Activated Carbons: Toxicity Aspects and Environmental Impact	Ali A.E., Chowdhury Z.Z., Devnath R., Ahmed M.M., Rahman M.M., Khalid K., Wahab Y.A., Badruddin I.A., Kamangar S., Hussien M., Pallan K.H., Mitra A.	Separations	Q3
17	Screening and characterization of fungal taxol-producing endophytic fungi for evaluation of antimicrobial and anticancer activities	Pandy R., Kumar S.S., Suresh P., Annaraj J., Pandi M., Vellasamy S., Sagadevan S.	Open Chemistry	Q3
18	Synthesis of Isoreticular Metal Organic Framework-3 (IRMOF-3) Porous Nanostructure and Its Effect on Naphthalene Adsorption: Optimized by Response Surface Methodology	Kalashgrani M.Y., Babapoor A., Mousavi S.M., Feizpoor S., Hashemi S.A., Binazadeh M., Chiang W.-H., Lai C.W.	Separations	Q3
19	Recent Developed Nitrogen/Sulfur Heterocyclic Compounds with Marked and Selective Antiviral Activities (Microreview)	Mutalabisin F., Ghafarikhaligh M., Mihankhah P., Khaligh N.G.	Current Organic Chemistry	Q3
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2	Impact of chitosan on CS/TiO2 composite system for enhancing its photocatalytic performance towards dye degradation	Afzal S., Naeem R., Sherino B., Nabi N., Behlil F., Julkapli N.M.	Desalination and Water Treatment	Q4
3	Ultraviolet-activated clamshell hydroxyapatite-substituted palladium in the photoreduction of methyl orange water pollutant	Azhar, A.L., Ma'Amor, A., Muhd Julkapli, N., Sairi, N.A., Noraizat, A.S.	Turkish Journal of Chemistry	Q4

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2	Catalytic dehydration of 2-propanol over nickel phosphide immobilized on natural bentonite	Hasanudin H., Asri W.R., Husnia L., Fanani Z., Maryana R., Al Muttaqii M., Zhu Z., Sagadevan S.	Reaction Kinetics, Mechanisms and Catalysis	SCOPUS
3	In vivo Study of Chalcone Loaded Carbon Dots for Enhancement of Anticancer and Bioimaging Potencies	Fahmi, M.Z., Aung, Y.-Y., Ahmad, M.A., Kristanti, A.N., Sakti, S.C.W., Arjasa, O.P., Lee, H.V.	Nanotheranostics	SCOPUS
4	Myrtle: a versatile medicinal plant	Gorjian H., Khaligh N.G.	Nutrire	SCOPUS
5	Optimization of Cobalt Nanoparticles for Biogas Enhancement from Green Algae Using Response Surface Methodology	Zaidi A.A., Khan S.Z., Naseer M.N., Almohammadi H., Asif M., Wahab Y.A., Islam M.A., Johan M.R., Hussin H.	Periodica Polytechnica Chemical Engineering	SCOPUS
6	An investigation of water gas shift reaction in a Pd-alloy membrane reactor with an optimized crossflow configuration	Chen W.-H.; Li S.-C.; Sharma A.K.; Juan J.C.; Saravanakumar A.	Energy Nexus	SCOPUS
7	One-pot Hydrothermal Synthesis and Characterization of Zirconium Oxide Nanoparticles	Sagadevan S.; Lett J.A.; Fatimah I.	Science and Technology Indonesia	SCOPUS
8	Phyto-mediated hydrothermal synthesis of NiFe2O4 as photocatalyst in tetracycline photodegradation	Fatimah I.; Yanti I.; Hana Afiyah Putri F.; Herianto D.; Sagadevan S.; Tamyiz M.; Doong R.-A.	Environmental Nanotechnology, Monitoring and Management	SCOPUS

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1	One-pot synthesis of Fe3O4/NiFe2O4 nanocomposite from iron rust waste as reusable catalyst for methyl violet oxidation	Fatimah I., Yanti I., Wijayanti H.K., Ramanda G.D., Sagadevan S., Tamyiz M., Doong R.-A.	Case Studies in Chemical and Environmental Engineering	Other
2	Substrate-integrated waveguide (SIW) microwave sensor theory and model in characterising dielectric material: A review	Khair, N.S., Talip Yusof, N.A., Wahab, Y.A., Bari, B.S., Ayob, N.I., Zolkapli, M.	Sensors International	Other

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2	Paul Thomas, Chin Wei Lai, Mohd Rafie Johan, Zaira Zaman Chowdhury	23. Biobased materials in removing heavy metals from water	Elsevier	978-0-323-91677-6	Advanced Applications of Biobased Materials - Food, Biomedical, and Environmental Applications	Shakeel Ahmed, Annu	551-568
3	Paul Thomas, Chin Wei Lai, Mohd Rafie Johan, Zaira Zaman Chowdhury	24. Biobased materials in removing organic dyes from water	Elsevier	978-0-323-91677-6	Advanced Applications of Biobased Materials - Food, Biomedical, and Environmental Applications	Shakeel Ahmed, Annu	569-592
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