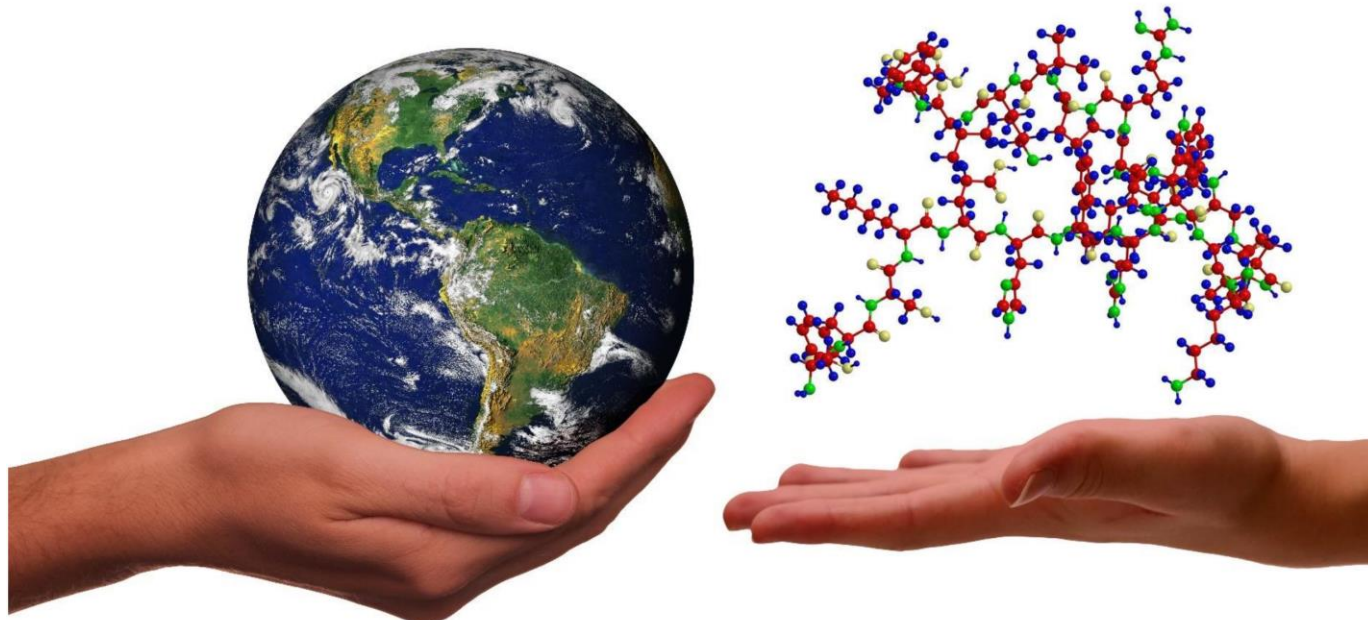


# IKM Pahang Branch Online Symposium 2021 : Chemistry For Sustainable World

16<sup>th</sup> January 2021

## E-Abstract Book



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# Welcoming Message



On behalf of the IKMPB Online Symposium organizing committee, I am honored to welcome you to the IKMPB Online Symposium. This is the first ever symposium by IKM Pahang Branch and we have to hold it virtually due to the COVID 19 pandemic. For your information, the IKM Pahang Branch is the newest branch that was established in 2019 under Institut Kimia Malaysia (IKM). 2020 has been a challenging year and I hope 2021 will be better for all of us.

In the roadmap of global development, chemistry can be used to improve the efficiency with which natural resources are used to meet human needs for products and services. For instance, chemical synthesis to produce novel materials for renewable energy. The symposium with the theme “Chemistry for Sustainable World”, will stimulate chemists to present innovative research ideas as well as encourage discussion and collaboration across universities and industries. This is parallel to United Nations Sustainable Development Goals and I believe Chemistry plays a vital role in shaping a sustainable world.

The organizing committee received overwhelming response for the participation and carefully reviewed and selected the papers to be presented virtually. The participation consists of chemists around Malaysia and all the accepted papers will be published in Malaysian Journal of Chemistry as Special Issue. Besides, I would like to thank our co-organisers (Universiti Malaysia Pahang & International Islamic University Malaysia) as well as sponsors (Water Analytical instruments, Agilent Technologies & Central Laboratory UMP) for their tremendous support. Not to forget our organizing committee who are so committed to make IKMPB Online Symposium into a great success. Thank you!

The IKMP Online Symposium represents an opportunity to inspire chemists with a perspective of ideas in shaping a sustainable world in chemistry way. We hope all of you find this symposium stimulating, rewarding and meaningful!

Thank you & Terima Kasih!

Best regards,

**Assoc. Prof. ChM Dr. Chong Kwok Feng**

**IKMPB Online Symposium 2021, Chairman**

# Welcoming Message



On behalf of Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang, I would like to congratulate Institut Kimia Malaysia Pahang Branch (IKMPB) for successfully organizing its first symposium virtually. The global pandemic of COVID19 has pushed us into living under new norm, including organizing intellectual event at online platform. We are honored can be part of this meaningful knowledge sharing event.

As you may notice, we are living in the world that advances at unprecedented rate. More and more technologies are created daily in order to improve human beings lifestyle. In this context, a balance between technology advancement and natural resources preservation is extremely important. It is our responsibility as a professional chemist to catalyze technology creation without compromising the environmental impact. “Chemistry for Sustainable World” is a timely and interesting theme. I see the overwhelming participation from universities around Malaysia is a good sign that our research direction is moving towards sustainable development in science and technology.

Lastly, I wish all of you to enjoy the cutting-edge knowledge sharing in this symposium.

Thank you.

Best regards,

**Assoc. Prof. ChM Dr. Mohd Hasbi Ab Rahim**

**Dean**

**Faculty of Industrial Sciences and Technology**

**Universiti Malaysia Pahang**

# Welcoming Message



Alhamdulillah. All praises to Allah the Almighty. I am delighted to welcome you to our first symposium organized by IKM Pahang Branch in collaboration with IIUM (International Islamic University Malaysia) and UMP (University Malaysia Pahang). It is in the greatest honor to see all of you participating in this virtual IKMPB Online Symposium 2021, gathering all chemists together with chemistry enthusiasts around Malaysia despite the challenging situation we are facing in the midst of COVID-19 pandemic. Thank you very much for your endless support and participation.

Likewise, on behalf of IIUM, I would like to express my heartfelt gratitude to IKMPB for the opportunity given to become a partner for this meaningful event. Equivalent to the IIUM vision to lead the dynamic progressive role in all branches of knowledge and intellectual discourse, this symposium is focusing on chemistry branch of science, with theme “Chemistry for Sustainable World” which aims to provide a platform for the researchers to integrate the research ideas and insights in addition to promote their latest discovery in various chemistry areas.

I believe that the IKMPB Online Symposium 2021 will surely become a massive success and offer a great prospective for the researchers to assimilate the sustainability ideas in chemistry. I would like to sincerely congratulate all the participants, not to forget our sponsors as well as the organizing committees of this symposium for their dedication and commitment. All in all, I hope everyone would take this opportunity to learn and grow. Happy engaging!

Thank you.

Best regards,

**Prof. Dr. Shahbudin Saad**

**Dean**

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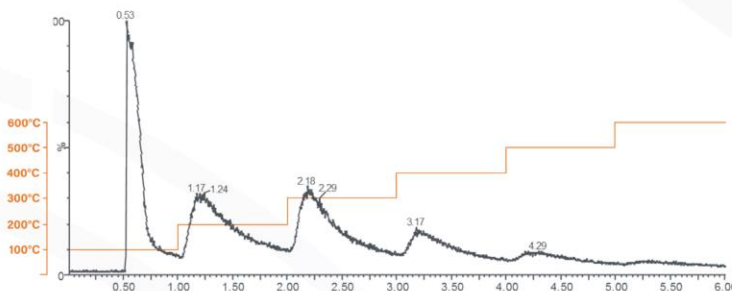
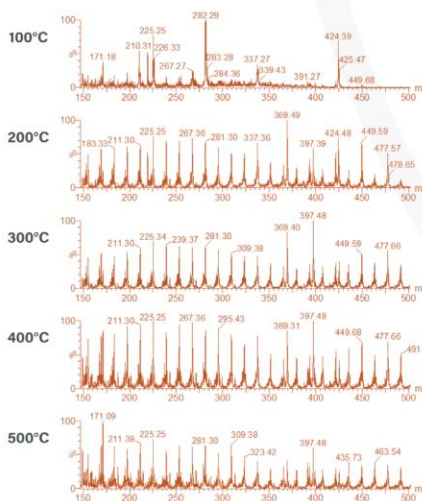
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# Program

Time	Session
8:30 – 9:00 AM	Registration (online)
9:00 – 9:05 AM	Welcoming Remarks by the Program Chair & Introduction
9:10 – 9:20 AM	Welcoming Message: <ul style="list-style-type: none"><li>• Dean - Kulliyyah of Science, IIUM, Kuantan Campus</li><li>• Dean - Faculty Industrial Sciences and Technology, UMP</li></ul>
9:30 – 10:35 AM	Session I
10:35 – 11:00 AM	Break
11:00 -12:30 PM	Parallel Sessions (II & III)
12:30 – 2:30 PM	Lunch Break
2:30 – 3:45 PM	Parallel Sessions (II & III)
	End

<b>Scan here to join:</b> Welcoming Session Session I Session II Session IV Closing Remark	
<b>Scan here to join:</b> Session III Session V	



## IKM PAHANG BRANCH Online Symposium 2021

<b>Welcoming Session</b> <a href="https://meet.google.com/ebo-dwoo-xcy" style="color: white;">https://meet.google.com/ebo-dwoo-xcy</a>		
8:30-9:00 AM	Registration (online)	
9:00-9:05 AM	Welcoming Remarks by the Programme Chair & Introduction	
9:10-9:15 AM	Welcoming Message: Dean - Kulliyah of Science, IIUM, Kuantan Campus	
9:15-9:20 AM	Welcoming Message: Dean - Faculty Industrial Sciences & Technology, UMP	
<b>Session I</b> <a href="https://meet.google.com/ebo-dwoo-xcy" style="color: black;">https://meet.google.com/ebo-dwoo-xcy</a> <b>Chairperson: Assoc. Prof. ChM Dr. Gaanty Pragas Maniam</b>		
9:30-9:50 AM	Waters Analytical Instruments Sdn. Bhd., Malaysia RADIANT™ ASAP – Discover the Power of Knowing Now	
9:50-10:05 AM	MJC-IKMP-23 Chemical composition of agarwood essential oil (aquilaria malaccensis) upon exposure Towards heat condition	
10:05-10:20 AM	MJC-IKMP-25 Discrimination of Herbal Products from Zingiberaceae Family Using Electric Nose Combined with Chemometric Techniques	
10:20-10:35 AM	MJC-IKMP-4 A preliminary study of potential aquatic Macrophytes in phytoremediation of lead in Muar river	
10:35-11:00 AM	<b>Break</b>	
	<b>Session II</b> <a href="https://meet.google.com/ebo-dwoo-xcy" style="color: black;">https://meet.google.com/ebo-dwoo-xcy</a> <b>Chairperson: ChM Dr. Rosliza bint Mohd Salim</b>	<b>Session III</b> <a href="https://meet.google.com/kmg-kzxm-nyq" style="color: black;">https://meet.google.com/kmg-kzxm-nyq</a> <b>Chairperson: Assoc. Prof. ChM Dr. Hazrulrizawati binti Abd Hamid</b>
11:00-11:15 AM	MJC-IKMP-6 A review on biosynthesis of nanoparticles for Fabric coatings	MJC-IKMP-19 La(III) Schiff Base complexes: Microwave-assisted synthesis, physicochemical and spectroscopic analysis
11:15-11:30 AM	MJC-IKMP-1 DNA-assisted stabilization of graphene sheets and its application as supercapacitors electrode	MJC-IKMP-21 Transformation Of Kaolin To Kalsilite: Effect Of KOH reaction temperatures concentrations and reaction temperatures
11:30-11:45 AM	MJC-IKMP-11 Structural characterization and visible light induced performance of Fe sensitized TiO <sub>2</sub> nanotube arrays prepared via photoelectrochemical electrodeposition	MJC-IKMP-17 Transesterification of waste cooking oil utilizing Heterogeneous K <sub>2</sub> CO <sub>3</sub> /Al <sub>2</sub> O <sub>3</sub> and KOH/Al <sub>2</sub> O <sub>3</sub>

11:45-12:00 PM	MJC-IKMP-12 In-vitro evaluation of crosslinked PVA/chitosan-gentamicin sulfate electrospun nanofibers	MJC-IKMP-22 Combining chemometrics, sensory analysis and chromatographic fingerprint of volatile, and phenolic compositions for systematic classification of pineapple ( <i>Ananas Comosus L.</i> )
12:00-12:15 PM	MJC-IKMP-3 Chemical properties of cocoa powder-like product from roasted seeds of fermented <i>nephelium lappaceum l.</i> (rambutan) and <i>nephelium mutabile</i> (pulasan) fruits	MJC-IKMP-18 The application of $K/Al_2O_3$ with ethanolic 2-methylimidazole for the extraction of naphthenic Acid from crude oil
12:15-12:30 PM		MJC-IKMP-5 Facile one-step preparation and characterization of graphene quantum dots suspension via electrochemical exfoliation
12:30-2:30 PM	<b>Lunch Break</b>	
	<b>Session IV</b> <a href="https://meet.google.com/ebo-dwoo-xcy">https://meet.google.com/ebo-dwoo-xcy</a>	<b>Session V</b> <a href="https://meet.google.com/kmg-kzxm-nyq">https://meet.google.com/kmg-kzxm-nyq</a>
	<b>Chairperson: Prof. ChM Dr. Shafida binti Abdul Hamid</b>	<b>Chairperson: ChM Dr. Ahmad Zamani Ab Halim</b>
2:30-2:45 PM	MJC-IKMP-7 Isolation of a morphinan alkaloid and methoxybenzoic acid with investigation on the Antibacterial effect of <i>Alphonsea Cylindrica</i> King leaves	MJC-IKMP-13 Calcium oxide catalyst derived Low Cost Chicken Egg Shell For Transesterification of Waste Cooking Oil To Biodiesel
2:45-3:00 PM	MJC-IKMP-9 Plant extracts: a promising source for the green synthesis of copper nanoparticles towards agriculture and environmental application	MJC-IKMP-14 Synthesis and characterization of amino acid-derived Hydantoins
3:00-3:15 PM	MJC-IKMP-10 Antibacterial and antiplasmodial properties of chemical compounds isolated from bark of <i>Phyllanthus acidus (l.) Skeels</i>	MJC-IKMP-15 Synthesis and characterization of Polyaniline/chitin (squid pens) for removal of Chromium (VI) from aqueous solution
3:15-3:30 PM	MJC-IKMP-16 Development of HPLC method and quantification of Amentoflavone from leaves extracts of three <i>Calophyllum</i> species	MJC-IKMP-26 Synthesis, structural elucidation and mesophase behaviour of hexasubstituted Cyclotriphosphazene molecules with amide linking unit
3:30-3:45 PM	MJC-IKMP-20 Isolation and cloning of sesquiterpene synthases (AmGS3 and AmGS4) and chalcone synthase (AmCHS) from <i>Aquilaria malaccensis</i> responsible for agarwood formation	MJC-IKMP-27 Synthesis, characterization and antimicrobial studies of metal complexes derived from Gentamicin Sulfate
3:45-4:00 PM	<b>Closing Remark</b> <a href="https://meet.google.com/ebo-dwoo-xcy">https://meet.google.com/ebo-dwoo-xcy</a>	

## FACILE ONE-STEP PREPARATION AND CHARACTERIZATION OF GRAPHENE QUANTUM DOTS SUSPENSION VIA ELECTROCHEMICAL EXFOLIATION

Wan Hazman Danial<sup>1\*</sup>, Bashariah Farouzy<sup>1</sup>, Mundzir Abdullah<sup>2</sup>, Zaiton Abdul Majid<sup>3</sup>

<sup>1</sup>Department of Chemistry, Kulliyah of Science, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

<sup>2</sup>Institute of Nano Optoelectronics Research and Technology, Universiti Sains Malaysia 11800 Penang, Malaysia

<sup>3</sup>Department of Chemistry, Faculty of Science, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia

\*Corresponding author: whazman@iium.edu.my

### Abstract

The study reports on the production graphene quantum dots (GQDs) suspension using simple electrochemical setup which involved electrolyte solution, consisting of citric acid and sodium hydroxide (NaOH) mixture, and pristine graphite rods were used for the electrode without any heating treatment (calcination), thusly avoid any high energy consumption. The balanced reaction mixture of citric acid and NaOH was used to investigate the effects of reaction time and voltage used towards the production of GQDs. UV-Vis spectroscopy analysis revealed significant UV absorption around 240-255 nm which depicted  $\pi \rightarrow \pi^*$  transition of aromatic  $sp^2$  C-C bonds while FTIR analysis showed the significant C=C stretching band around  $1635\text{ cm}^{-1}$  attributed by the aromatic ring. The exfoliation of the GQDs increased as the concentration of NaOH in electrolyte, time taken and voltage increased. The optimum GQDs suspension can be produced using the balanced ratio of citric acid and NaOH with a voltage of 10 V for 2 hours reaction time. TEM analysis confirmed the presence of the GQDs obtained with average size of  $\sim 5\text{ nm}$  for the optimum GQDs suspension. The exfoliation of GQDs via the electrochemical technique might pave the way towards upscale and sustainable production of the nanomaterial.

**Keywords:** Graphene, Graphene quantum dots, suspension, electrochemical, exfoliation