

GRAPHENE MALAYSIA 2016

8 - 9 NOVEMBER 2016
CONNEXION CONFERENCE & EVENT CENTRE
SUMMIT 2 BALLROOM, LEVEL M1, THE VERTICAL
BANGSAR SOUTH CITY, KUALA LUMPUR
MALAYSIA

Organisers:



NANOMALAYSIA™



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MINISTERS' STATEMENTS



YB DATUK SERI PANGLIMA MADIUS TANGAU

Minister of Science, Technology and Innovation
(Malaysia)

"Graphene as I see it, can re-energise Malaysia's economy to become more competitive in the sense that economic growth is sustained and the nation can now create and maintain an environment for wealth creation.

Malaysia's new economy will be accelerated by industry development; generating wealth from Science, Technology and Innovation particularly through graphene-based products such as high value tyres, better performing plastics and longer lasting batteries."



YB DATO' SRI MUSTAPA MOHAMED

Minister of International Trade and Industry
(Malaysia)

"Researchers from all around the globe have been scrambling to better understand graphene, dubbed as the supermaterial. As such, the Graphene Malaysia 2016 conference is timely in providing valuable insights and platform to further discuss the potential of graphene to be a key material in industries such as automotive, electronics and medicine. Graphene could be the resource that will drive the next era of human history, but we cannot unlock its true potential without addressing the challenges that come with it. Malaysia is keen to be part of this process."

NANOMALAYSIA'S CHAIRMAN STATEMENT



**YBHG. PROF. EMERITUS DATO' IR.
DR. MOHAMAD ZAWAWI BIN ISMAIL**
Chairman of NanoMalaysia Berhad
(Malaysia)

“Materials throughout history have affected the development of society as we have seen with iron, brass and steel, and in the last two decades silicon materials have enabled the advancement of computers and the ubiquity of information technology. Today, the emergence of the supermaterial graphene is set to alter the future. It is hard to imagine that a single layer of graphite which is graphene could take some amazing properties, enough to have drastic implications for the future of physics, engineering, and industry. This is what inspired us in NanoMalaysia for the last five years to think of a wide range of uses for the material. At the same time encouraging government, university, and industry collaboration in order that the nation will not miss the opportunity to reap benefits from it. We are happy to co-organise Graphene Malaysia 2016, a platform for networking and collaboration and welcome all participants.”

FOREWORD

On behalf of the Organising Committee we take great pleasure in welcoming you to Kuala Lumpur for the first edition of the Graphene Malaysia International Conference.

Graphene Malaysia 2016 is jointly organized by NanoMalaysia Berhad and Phantoms Foundation with the support of the Ministry of Science, Technology and Innovation (MOSTI), Ministry of International Trade and Industry (MITI), Malaysian Investment Development Authority (MIDA), Agensi Inovasi Malaysia (AIM) and the National Graphene Action Plan 2020 act as the strategic partner for this event. The conference will be centered on graphene industry interaction and collaborative innovation. The event is launched under the National Graphene Action Plan 2020 (NGAP 2020), which is expected to generate about 9,000 jobs and RM20 (US\$4.86) billion GNI impact by the year 2020.

The conference will feature a plenary session and extensive thematic workshops (Graphene production / Applications of graphene and related materials / Metrology, characterization and standardization / Funding & infrastructure support) and a significant exhibition.

We are indebted to the following institutions for their help and/or financial support:

Ministry of Science, Technology and Innovation (MOSTI) | Ministry of International Trade and Industry (MITI) | National Graphene Action Plan 2020 (NGAP2020) | Agensi Inovasi Malaysia (AIM) | Malaysian Investment Development Authority (MIDA).

We would also like to thank the following companies for their participation as exhibitors: RGS Corporation Sdn Bhd, Aseptec Sdn Bhd, Anton Paar Malaysia Sdn Bhd, LabAlliance Sdn Bhd, Quasi-S Technology, Metrohm (Malaysia) Sdn Bhd, aNexus, Nexus Analytics Sdn Bhd, Malaysian Investment Development Authority (MIDA), MIMOS Semiconductor (M) Sdn Bhd, Crest NanoSolutions (M) Sdn Bhd, Grafoid Inc., QuantumWise A/S and NanoMalaysia.

We would also like to thank all the speakers and attendees that joined us this year.

We truly hope that Graphene Malaysia 2016 serves as a platform for interaction and collaboration.

In addition, thanks must be given to the staff of all the organizing institutions whose hard work has helped in planning this conference.



DR. REZAL KHAIRI AHMAD
Chief Executive Officer
NanoMalaysia Berhad (Malaysia)



DR. ANTONIO CORREIA
President
Phantoms Foundation (Spain)

PROGRAMME

Tuesday, 08 November

08:15		Arrival of VIP Registration of participants & media
09:00		National Anthem & Doa Recitation
09:05		Welcoming remarks by NanoMalaysia & Phantoms Foundation
09:15		Opening remarks by Minister of International Trade & Industry, Y.B. DATO' SRI MUSTAPA MOHAMED
09:30		Officiating remarks by Minister of Science, Technology & Innovation, Y.B. DATUK SERI PANGLIMA MADIUS TANGAU
09:45		Launching Ceremony and NanoMalaysia's 5th Year Celebration
09:55		Photo Session
10:00		Networking coffee break
10:45	Keynote	FRANCESCO BONACCORSO (Istituto Italiano di Tecnologia, Graphene Labs, Italy) Large scale production of 2D crystals-based composites for energy and (opto)electronic applications
11:25	Invited	WON JONG YOO (Samsung-SKKU Graphene-2D Center (SSGC), South Korea) Carrier Transport at the Interface of 2-Dimensional Materials
11:55	Oral	RYUTA YAGI (Hiroshima University, Japan) Ballistic and phase coherent transport in high-mobility graphene antidot lattices made on h-BN
12:10	Invited	ARCHANA VENUGOPAL (Texas Instruments, USA) Graphene devices and integration: A primer on challenges
12:40		Networking Lunch
14:00	Invited	PONTUS NORDIN (SAAB, Sweden) Graphene and related Nano Materials for Aerospace Applications
14:30	Invited	KRZYSZTOF KOZIOL (FGV-Cambridge Nanosystems, UK) Large scale sustainable production of graphene for real-life applications
15:00	Invited	MARK ROZARIO (Agensi Inovasi Malaysia, Malaysia) Paving the Way for Graphene in Malaysia
15:30		Networking coffee break
16:30	Invited	ABDUL RAHMAN MOHAMED (Universiti Sains Malaysia, Malaysia) Simultaneous Growth of Monolayer Graphene on Nickel-Copper Bimetallic Layered Catalyst
17:00	Invited	VICKNESWARAN VELOO (Scomi Chemicals, Malaysia) Nano-Graphene Engineered Lubricant for Drilling Fluids

Wednesday, 09 November

PARALLEL SESSION 1: Graphene Production

- 09:00 **KUAN-TSAE HUANG** (AzTrong Inc., USA/Taiwan)
Invited Graphene Commercialization Challenges and Opportunities
- 09:30 **GOPI SEKCHAR** (GB Sekhar Sdn. Bhd., Malaysia)
Invited The Significance of Nano Graphene Reinforcement in Rubber Compound Applications
- 10:00 **J. PATRICK FRANTZ** (Haydale Technologies (Thailand) Co., Ltd., Thailand)
Oral Enhancing Composite Materials with Functionalized Graphene & CNTs
- 10:15 **SAIFOLLAH ABDULLAH** (Universiti Teknologi MARA, Malaysia)
Oral The Preparation of Graphene on Nanostructured Porous Silicon Substrate by Mechanical Exfoliation Method
- 10:30 **Networking coffee break**

PARALLEL SESSION 2: Metrology, Characterization and Standardization

- 11:00 **PEDRO M. DA COSTA** (King Abdullah University of Science and Technology KAUST, Saudi Arabia)
Invited Validating the chemical analysis of nanocarbons with certified reference materials
- 11:30 **NORAZIRA BINTI OTHMAN** (NANOVerify Sdn .Bhd., Malaysia)
Invited NANOVerify Programme: Protecting Consumer's Right Through Product Labelling & Certification
- 12:00 **AZMAN HASSAN** (Universiti Teknologi Malaysia, Malaysia)
Invited Graphene Reinforced Polymer Nanocomposites: Recent Development and Opportunities
- 12:30 **MUHAMMAD ANIQ SHAZNI MOHAMMAD HANIFF** (MIMOS Semiconductor Sdn Bhd, Malaysia)
Oral Plasma Surface Modification of Graphene Sheet with Enhanced Pressure Sensing Performance
- 13:00 **Networking lunch**

Wednesday, 09 November

PARALLEL SESSION 3: Applications of Graphene and Related Materials

09:00 Invited	HONGWEI ZHU (Tsinghua University, China) Graphene-on-surfaces for multifunctional applications
09:30 Invited	ELENA POLYAKOVA (Graphene Laboratories Inc., USA) Advanced Graphene Composites for 3D Printing and Other High End Applications
10:00 Oral	AZRUL AZLAN HAMZAH (Institute of Microengineering and Nanoelectronics (IMEN), Universiti Kebangsaan Malaysia, Malaysia) Thin Layer Graphene for Biomedical Applications
10:15 Oral	ZAITON ABDUL MAJID (Universiti Teknologi Malaysia, Malaysia) Marriage of Graphene and Cellulose for Reinforced Composite Preparation
10:30	Networking coffee break
11:00 Invited	PEDRO GOMEZ-ROMERO (ICN2 (CSIC-BIST), Spain) What Could Be Better Than Graphene for Energy Storage?
11:30 Invited	TAAVI MADIBERK (Skeleton Technologies, Estonia) Graphene ultracapacitors - the skeleton of electric & hybrid power systems
12:00 Oral	MADHURI DUTTA (ZapGo Ltd, United Kingdom) Nanocarbon for energy storage
12:15 Oral	XU JING (Soochow University, China) Scalable MoS ₂ phototransistors with ultra low power consumption and high light/dark current ratios
12:30 Oral	MOHD ROFEI MAT HUSSIN (MIMOS Bhd, Malaysia) Graphene-on-Silicon Technology to Advance Power Semiconductor Devices
13:00	Networking lunch

Wednesday, 09 November

PARALLEL SESSION 4: Funding and Infrastructure Support

09:00 Invited	MURNI ALI (NanoMalaysia, Malaysia) National Graphene Action Plan 2020
09:30 Invited	ANTONIO CORREIA (Phantoms Foundation, Spain) "Graphene and 2D Materials" EUREKA Cluster: Fostering European Competitiveness
10:00 Invited	CHESTER BURTT (Grafoid Inc, Canada) Grafoid: collaboration is the key to Graphene's commercialization
10:30	Networking coffee break
11:00 Invited	ADISORN TUANTRANONT (NECTEC, Thailand) Status of Graphene Research and Industry in Thailand
11:30 Invited	AMIRUDDIN KEMAT (Malaysia Debt Ventures Berhad (MDV), Malaysia) Strategizing your business for debt financing
12:00 Invited	WAN RAIHANA WAN AASIM (Malaysian Technology Development Corporation (MTDC), Malaysia) MTDC: The Complete Equation
12:30 Invited	RAZIF ABDUL AZIZ (Cradle Fund Sdn. Bhd., Malaysia) TBA
13:00	Networking lunch

Wednesday, 09 November

PLENARY

14:15 **AHMAD KHAIRUDDIN ABDUL RAHIM** (Malaysian Investment Development Authority (MIDA), Malaysia)
Invited Advanced Materials (Graphene): Investment Opportunities in Malaysia

14:45 **KU KOK PENG** (Performance Management & Delivery Unit (PEMANDU), Malaysia)
Invited National Graphene Action Plan 2020: Transforming Innovation Delivery

15:15 **ANTHONY SCHIAVO** (Lux Research Inc., Singapore)
Invited Graphene Global Outlook: Roadmap for applications and opportunities

15:45 **Networking coffee break**

16:15 **JIA NING LEAW** (National University of Singapore/Graphene Research Centre, Singapore)
Oral Mott insulator phase transition in graphene

16:30 **SHU-JEN HAN** (Nanoscale Science & Technology IBM T.J. Watson Research Center, USA)
Keynote Nanoelectronics Based on Graphene and Beyond

17:10 **ANTONIO CASTRO NETO** (Centre for Advanced 2D Materials and Graphene Research Centre,
Keynote National University of Singapore, Singapore)
2D Materials: Science, Technology, and Standards

17:50 **Closing / End**

CONFERENCE ROOMS

PLENARY: Summit 2 Ballroom

EXHIBITION, LUNCH & COFFEE BREAKS: Summit 1 Ballroom

PARALLEL SESSION 1: Pinnacle 5

PARALLEL SESSION 2: Pinnacle 5

PARALLEL SESSION 3: Pinnacle 4

PARALLEL SESSION 4: Pinnacle 3

POSTERS LIST

KASRA ASKARI (Isfahan University of Technology, Iran)

Preparation and evaluation of Copper particles on reduced graphene oxide as an efficient electrocatalyst for enhancing electrochemical performance of the Lithium-Thionyl Chloride Batteries

CHANG-HSIAO CHEN (Feng Chia University, Taiwan)

Enhanced Hole Mobility of CVD Transition Metal Dichalcogenide Monolayer by Metal Nanoparticles

OLEKSIY KHAVRYUCHENKO (Research and Development Department, TMM LLC, Ukraine)

Possibility of application of two-domain model for graphenic materials with high electrical conductivity

HAK YONG KIM (Chonbuk National University, South Korea)

Graphene wrapped MnO_2 nanostructures for desalination via capacitive deionization

SHINJI KOH (Aoyama Gakuin University, Japan)

Single Crystal Graphene Growth on Reusable Iridium/Sapphire Substrates

INYONG MOON (SKKU Advanced Institute of Nano-Technology (SAINT), Sungkyunkwan University, South Korea)

Chemical doping for Low Contact Resistance and De-Pinning at the Interface of Molybdenum Based Chalcogenides and Metals

NORITOSHI NAKAGAWA (Aoyama Gakuin University, Japan)

Electrochemical characteristics of enzyme/graphene electrodes

HO-KIN TANG (Centre for Advanced 2D Materials and Graphene Research Centre, NUS, Singapore)

Quantum Monte Carlo study of the fermi velocity enhancement in graphene

SPEAKER'S PROFILE



AHMAD KHAIRUDDIN ABDUL RAHIM

Malaysian Investment Development Authority, Malaysia

He is currently the Executive Director, Manufacturing Development (Resource) of the Malaysian Investment Development Authority (MIDA), a Government agency that drives investments into the manufacturing and services sectors in Malaysia. His portfolio covers three (3) industries namely Chemical and Advanced Materials, Food Technology and Sustainable Resources and Life Sciences and Medical Technology.

He holds a Masters Degree in International Business and started his career with MIDA in 1991. Since joining MIDA, he had served in several divisions in MIDA. He was also involved in various projects on industrial development, such as the formulation of the Third Industrial Master Plan, Green Technology Master Plan and the Eleventh Malaysia Plan (2016-2020) and a Secretariat to the Malaysian Logistics Council. Currently, he is a member to the Industry Advisory Panel (IAP) for three (3) high potential growth industries namely Chemical & Advanced Materials, Medical Devices and Pharmaceuticals; among the prominent subsectors in Eleventh Malaysia Plan.

MURNI ALI

NanoMalaysia Berhad, Malaysia

Received her Bachelor of Science (Hons) Biomedical Degree from UPM and Master of Business Administration in International Business from University of East London, United Kingdom. With more than 10 years' experience in the field of Business Development and Marketing, she is currently heading the National Graphene Action Plan 2020 Office.



Ms. Murni brings diversified experiences in operations and managerial functions of the Business Development and Marketing fields. Well defined understanding of the business-technology interface and capacity to identify and align clients' emerging technology needs with products and services, she has been involved in various business-development disciplines underscores expertise in engaging decision makers and devising winning sales strategies and solutions exercises.



RAZIF ABDUL AZIZ

Cradle Fund Sdn. Bhd., Malaysia

Mr. Encik Razif Abdul Aziz serves as Chief Operating Officer at Cradle Fund Sdn Bhd since January 2016. Previously, he joined Malaysian Biotechnology Corporation (BiotechCorp) in 2006.

Mr. Aziz served as the Chief Operating Officer of Malaysian Genomics Resource Centre Berhad since December 3, 2012. He is a Barrister-at-Law from Lincoln's Inn, London (1992). Mr. Aziz holds a degree in Law from Coventry Polytechnic in 1991.

FRANCESCO BONACCORSO

Istituto Italiano di Tecnologia (IIT) - Graphene Labs, Italy

Gained a PhD from the Department of Physics, University of Messina in Italy after working at the Italian National Research Council, the Engineering Department of Cambridge University (UK) and the Department of Physics and Astronomy of Vanderbilt University (USA).



In June 2009 he was awarded a Royal Society Newton International Fellowship at the Engineering Department of Cambridge University, and elected to a Research Fellowship at Hughes Hall, Cambridge. In April 2014 he joined the Istituto Italiano di Tecnologia, Graphene Labs. He was responsible in defining the ten years scientific and technological roadmap for the graphene flagship programme. His research interests encompass solution processing of carbon nanomaterials (such as graphene, nanotubes and nanodiamonds) and inorganic layered materials, their spectroscopic characterization, incorporation into polymer composites and application in solar cells, light emitting devices, lithium-ion batteries and ultrafast lasers.



CHESTER BURTT

Grafoid Inc., Canada

Chester Burt is a Director of critical material developers Focus Graphite Inc. and Stria Lithium Inc. He also serves as Director of Strategic Development for Grafoid Inc, a global leader in graphene application development.

Mr. Burt is President of Chester Burt & Associates Ltd. ("CBAL") a corporate and public affairs advisory firm that specializes in connecting private and public companies with domestic and international opportunities. CBAL arranges for the provision and supply of financial services in mergers, acquisitions and joint ventures. Working through an international network and associate firms, CBAL has a 25-year history of offering a full range of services to assist companies with strategy development and decisions to best suit their investor and corporate relations.

Mr. Burt graduated from Wilfrid Laurier University in Waterloo, Ontario with an MA in Political Science and spent some 15 years working in the Canadian political arena.

ANTONIO H. CASTRO NETO

National University of Singapore, Singapore

Professor A. H. Castro Neto got his Ph.D. in Physics at University of Illinois at Urbana Champaign in 1994. In 1994, he moved to the Institute for Theoretical Physics at the University of California at Santa Barbara as a postdoctoral fellow.

In 1995, he became an Assistant Professor at University of California at Riverside. In 2000, he moved to Boston University as Professor of Physics. At Boston, Prof. Castro Neto became one of the leading theorists in the study of graphene. In 2010, Prof. Castro Neto became the Director of the Graphene Research Center and Distinguished Professor at the National University of Singapore . In 2003, Prof. Castro Neto was elected a fellow of the American Physical Society. He is the colloquia Editor for Reviews of Modern Physics, and co-editor for Europhysics Letters. Prof. Castro Neto has authored more than 200 manuscripts and has published in prestigious journals including Science, Nature Materials, Nature Physics, and Physical Review Letters, and has over 12,000 citations. Prof. Castro Neto has given more than 200 seminars worldwide.





ANTONIO CORREIA

Phantoms Foundation, Spain

Antonio Correia is the founder and President of the Phantoms Foundation & Doctor in Physics (Université Paris 7, France). Has worked in France at the CNRS and the CSIC in Spain, both national research institutes.

Currently, he is president of the Phantoms Foundation, a non-profit organization created in November 2002 in Madrid, and serves also as the Coordinator of the Eureka Cluster on Graphene and 2D materials, nanoSpain and M4nano (nano for modelling) networks and of the nanotechnology plan for ICEX (Spain Trade & Investment). Has been involved in more than 15 EU funded projects and author of more than 60 publications and book chapters. He serves also as a Chairman of major conferences in Graphene Worldwide.

PEDRO M. DA COSTA

King Abdullah University of Science and Technology
KAUST, Saudi Arabia

He is an Assistant Professor at the Materials Science and Engineering Program of the King Abdullah University of Science and Technology (KAUST) and Adjunct Assistant Professor at the University of Aveiro (UA), Portugal .

Previously, he was a Junior Research Group Leader at UA while also holding a position as Alexander von Humboldt Fellow at the IFW-Dresden, Germany. Dr. Costa worked as a post-doctoral research associate at the National Institute for Materials Science (NIMS), Japan, and, before that, at the Department of Materials Science and Metallurgy of the University of Cambridge, United Kingdom. He has been a short-term visitor on various occasions at IFW-Dresden, NIMS, Technical University of Denmark, Monash University (Australia), McMaster University (Canada) and University of Heidelberg (Germany). His graduate studies were carried out under the supervision of Prof. Malcolm L. H. Green FRS, at the Inorganic Chemistry Laboratory, University of Oxford, United Kingdom.





PEDRO GOMEZ-ROMERO

ICN2 (CSIC-BIST), Spain

BSc and MSc Universidad de Valencia, Spain. PhD in Chemistry, Georgetown University, USA, 1987, with Distinction. CSIC Researcher since 1990 (ICMAB, 1990-2007).

Sabbatical as NATO Senior Research Fellow at the National Renewable Energy Laboratory (Golden, CO, USA, 1998-99). CSIC Full Research Professor (2006-) and Group Leader of NEO-Energy lab at CIN2 (CSIC) (2007-2013) now part of ICN2. Fellow of the Royal Society of Chemistry. Directs projects on hybrid organic-inorganic nanostructures, nanocomposite materials for energy storage and conversion (lithium batteries, supercapacitors, PEM FCs, solar-thermal energy, nanofluids, graphene). Author of 102 (ten to the two) scientific publications in refereed international journals.

SHU-JEN HAN

Nanoscale Science & Technology IBM T.J. Watson
Research Center, USA

Dr. Shu-Jen Han is a manager and Research Staff Member at the IBM T. J. Watson Research Center. He holds a Ph.D. in Materials Sci. & Eng. and Ph.D. minor in Electrical Engineering from Stanford University (2007), and a B.S. from National Tsing-Hua University, Taiwan (1999).



His current research activities encompass the heterogeneous integration using low-dimensional carbon nanomaterials to develop novel nanodevices, for applications such as post-Si electronics, optoelectronics, plasmonics and biosensing. His group is recognized for demonstrating the world's most advanced graphene circuit as well as the smallest carbon nanotube transistors that could outperform Silicon. He has authored or co-authored over 70 technical publications and his research has been featured by media. He holds over 100 US patents, and was appointed as IBM Master Inventor (2012, 2015).



AZMAN BIN HASSAN

Universiti Teknologi Malaysia, Malaysia

He is a Professor and currently serving as a Deputy Dean (Research and Innovations) in the Faculty of Chemical Engineering, Universiti Teknologi Malaysia (UTM). He is also serving as a UTM Senate member for the last four years.

He started his career with UTM in 1984 and was appointed as a Professor in 2007. He received his PhD from Loughborough University (UK) in 1997. He was the Deputy Director (Research Publications) for Research Management Center from 2008 to 2011. From 2012 to 2013, he was the Director of Research Publications Center. He was the Head of Polymer Engineering Department from 2002 to 2008. His area of research interests includes, polymer blends, thermal characterization, toughened polymers, natural fibres composites, graphene, nanocomposites and flame retardant polymers. He has published over 300 papers in journals and conferences proceeding and book chapters. He is currently the Editor-in-Chief of the Malaysian Polymer Journal and Perintis eJournal. He has also been appointed as reviewer for more than 20 different journals.

KUAN-TSAE HUANG

AzTrong, USA/Taiwan

He is an expert in Graphene and graphene commercialization in heat spreading, battery & supercapacitor, composites and other graphene applications. He had 20+ years working at IBM, was a Vice President, played a key role to help IBM successfully transformed into a global service company, in charge of e-commerce implementation, intellectual capital and asset Management, solution offerings, etc.



He is an experienced business transformation and implementation consultant. Dr. Huang's career included the President of National Taiwan Normal University; visiting faculty of several universities in Singapore, US and Taiwan; National Institute of Health, US, etc. He is also an experienced entrepreneur in Silicon Valley. Currently, he is the Chairman/CEO of AzTrong (Graphene & Applications), Senior Advisor to Ditthavong & Steiner patent law firm, Ditthavong & Steiner, Chairman of Taskco e-Business Corporation.

AMIRUDDIN KEMAT

Malaysia Debt Ventures Berhad (MDV), Malaysia

He is the Senior Vice President, Corporate Planning Division of Malaysia Debt Ventures Berhad (MDV). He is a graduate of University of Alabama, USA and obtained his degree in Bachelor of Science & Business Administration majoring in Corporate Finance & Investment Management.



He has over 15 years of broad-based management and extensive business development experience in various industries. His credentials also include more than 10 years in the financial institutions undertaking credit evaluation, business development and structuring credit facilities for the SMEs. He was previously with PBA Holdings Bhd (PBAHB) undertaking responsibilities on enhancing business network, strengthening stakeholder relations, identifying business opportunities, ensuring good corporate governance and overseeing the group risk management plan. His scope of work also expanded after being appointed as the Risk Management Committee Chairman of PBAHB group who leads and facilitates the implementation of risk management plan holistically. Prior to this, he was the Business Development Manager of IFS Capital (M) Sdn Bhd which is responsible in building up revenue channels covering credit assessment, business development and identifying business potential and target sectors.

KRZYSZTOF KOZIOL

FGV Cambridge Nanosystems, UK

He is the co-founder and Executive Director of FGV Cambridge Nanosystems, involved in the technology development and responsible for business development and corporate governance of the Company

He co-shares this role with his academic positions as director of studies at Pembroke College Cambridge, Head of Electric Carbon Nanomaterials research and president of The International Society of Nanoscience.

Krzysztof graduated with a first class degree in Chemistry and Chemical Engineering from Silesian University of Technology in Poland in 2001, and subsequently with a PhD in Materials Science from University of Cambridge. At the University of Cambridge he held prestigious positions of Oppenheimer Research Fellow and Royal Society University Research Fellow. Krzysztof is a reviewer for various international journals and author of more than 130 peer reviewed scientific articles, 2 book contributions and 16 patents.





TAAVI MADIBERK

Skeleton Technologies, Estonia

He is the Co-Founder and Chief Executive Officer at Skeleton Technologies. His business development, sales and marketing and company management skills have been instrumental in setting-up and driving growth.

He has been the driving force for excellent customer traction, (the company counts as customers European Space Agency and several Tier 1 automotives), business strategy (leveraging the advantage in materials technology to energy storage cells and modules), product development and fundraising from venture capital, private equity and public sources in German, Estonian and EU level. Mr Madiberk brings knowledge from the IT, locomotive and NGO sectors from his experience prior to Skeleton Technologies.

ABDUL RAHMAN MOHAMED

Universiti Sains Malaysia, Malaysia

Has been appointed by the Ministry of Higher Education as the Deputy Vice-Chancellor, Industry and Community Network of Universiti Sains Malaysia for a term of three years effective from 1st of May 2016.



A Top Research Scientist in Malaysia (TRSM) and an expert in Reaction Engineering and Catalysis, Air Pollution Monitoring and Control, Fuel Technology and Nanotechnology obtained his undergraduate degree in Chemical Engineering from the University of Southern California, USA and later graduated with a master of science (Chem. Eng.) and PhD in the same field from the University of New Hampshire, both in the United States. Professor Dr. Abdul Rahman Mohamed began his career at USM as a lecturer in 1993. He has served as the Director of the Industry Collaboration Centre as well as being among the main academicians heading the Research and Development Division of 'Collaborative Research in Engineering, Science and Technology'. He is well-known as a researcher and scientist with more than 80 grants awarded to him internationally, valued more than RM18 million, and having publications with high-impact citations, in addition to hundreds of research papers in various well-renowned academic journals, along with academic and professional networks from various countries including Japan and France.

PONTUS NORDIN

Saab AB, Saab Aeronautics, Sweden

Technical Fellow, Overall Design and Airframe Technologies.

Pontus Nordin has more than 35 years of experience from technology development related to materials and processing-, design and manufacturing of composite structures. His current focus is development of aerostructures with multifunctional properties and improved airframe performance through engineered nanocomposite materials.



NORAZIRA BINTI OTHMAN

NANOVerify Sdn .Bhd., Malaysia

Master of Engineering (Materials and Technology), University of Malaya, Malaysia. Bachelor of Science with Honours (Chemical Technology), Universiti Kebangsaan Malaysia (National University of Malaysia). Operation Executive (NanoVerify Sdn Bhd):

- Monitoring and ensuring the smoothness of the development activities
- Supporting the Managing Director from time to time
- Identify reference materials for NANOVerify Programme (SOPs and International Standards)
- Identify partners and labs for NANOVerify Programme





KU KOK PENG

Performance Management & Delivery Unit (PEMANDU),
Malaysia

He joined PEMANDU in Aug 2010 as Associate Director, Communications & Investor Relations. Since Aug 2011, he is Director for ETP Investment, working with various investment agencies to coordinate, promote, track and report investment as well as

PEMANDU's permanent representative to the Investment Committee co-chaired by the Minister of International Trade & Industry and PEMANDU CEO.

In July 2012, he added Palm Oil & Rubber NKEA to his portfolio and assumed the Innovation portfolio in March 2014.

Ku co-authored a Harvard Business School case study on the ETP published in late 2012. In summer 2013, he participated in the International Visitor Leadership Programme by the State Dept of States.

Previously, Ku served FleishmanHillard for seven years and last held the position of Managing Director, Market Development, SEA.

ELENA POLYAKOVA

Graphene Laboratories Inc., USA

She founded Graphene Laboratories in 2009 and serves as its President and Chief Executive Officer. Dr. Polyakova has been Co-Chief Executive Officer of Graphene 3D Labs, Inc. since August 12, 2015 and served as its Chief Operating Officer from August 11, 2014 to August 2015.

Dr. Polyakova has been a Member of Advisory Board at Lomiko Metals Inc. since April 30, 2013. She has been a Director of Graphene 3D Labs, Inc. since August 8, 2014. Dr. Polyakova is an invited speaker at many international forums and conferences, and her input on the graphene industry is regularly published by journalists covering business and technology. Dr. Polyakova has won numerous awards for her entrepreneurship. She received her Masters' degree in Physics and Applied Mathematics with honors from the Moscow Institute of Physics and Technology, and her Ph.D. in Chemistry from the University of Southern California.





MARK ROZARIO

Agensi Inovasi Malaysia (AIM), Malaysia

Mark Rozario was Group Managing Director of a Malaysian listed property group, before stepping down to assume his current role at AIM in 2011. He is charged with driving AIM, a government statutory body chaired by the country's prime minister, to implement a national innovation strategy.

AIM was created to jump start wealth creation through knowledge, technology and innovation to stimulate and develop the innovation eco-system in Malaysia by laying down the foundation of innovation to inspire and produce a new generation of innovative entrepreneurs. Mr. Rozario graduated with a BSc degree in Economics from the London School of Economics and is a Fellow of the Institute of Chartered Accountants in England and Wales.

ANTHONY SCHIAVO

Lux Research Inc., Singapore

Anthony Schiavo is an Analyst based in Lux Research's Singapore office. Anthony is a member of the Advanced Materials team, where he conducts research on technical and market trends in areas such as advanced ceramics, metamaterials, composites and coatings.

Prior to joining Lux Research, Anthony received a B.S. in Materials Science and Engineering from Virginia Tech. While at Virginia Tech, Anthony researched biomaterial composite and nanoparticle technology and ethics.



GOPI SEK HAR

GB Sekhar Sdn. Bhd, Malaysia

Mr. Gopinath B. Sekhar has over 33 years of work experience involved in a wide range of activities from commercial trading, manufacture and processing of palm oil and Rubber to Research and Development in polymers, recycling and sustainable solutions. His production process experience ranges from installation and up-grading capacity to running a wide variety of large production units.

The last 15 years with specific involvement in rubber technology, development of processing technologies and application solutions. Having personally developed several new proprietary technologies of commercial significance related to rubber recycling and incorporation of recycled content into value added applications focus of activities have been in Rubber.

ADISORN TUANTRANONT

National Electronics and Computer Technology Center
(NECTEC), Thailand

Received B.S. degree in Electrical Engineering from King Mongkut's Institute of Technology Ladkrabang (KMITL) in 1995 and the M.S. and Ph.D. degrees in Electrical Engineering (Photonics and MEMS) from University of Colorado at Boulder in 2001.

From 2001-2014, he has been the Lab director of Nanoelectronics and MEMS Laboratory, National Electronic and Computer Technology Center (NECTEC) in Thailand. Since 2012, he found and works as Director at Thai Organic and Printed Electronics Innovation Center (TOPIC), NSTDA. He authors more than 110 refereed journal papers and 300 international proceeding papers including 1 International PCT patent, 5 granted Thai patents and more than 25 patents holding. He also actively works as Executive Advisor at Thailand Advanced Institute of Science and Technology (THAIST), National Science Technology and Innovation Policy Office, Ministry of Science and Technology of Thailand. He is co-founder of two startup companies, Innophene and ThaiKK Tech. He also is founder of Graphene Thailand, the first graphene research community and networking cluster in Thailand. From 2016, he is elected to be General Secretary of Materials Research Society of Thailand (MRS-Thailand).



VICKNESWARAN VELOO

Scomi Chemicals, Malaysia



Vick has over 19 years of experience in the oil & gas industry. He was previously with Baker Hughes, specializing in drilling and completion fluid systems as well as production chemicals. He led the Engineering Group for the entire Baker Hughes product lines ranging from drilling system tools to well completion systems in Saudi-Bahrain Geomarket as Associate Technical Engineering Director.

In his current role as Chief Technology Officer for Scomi Chemicals, he is responsible for developing technologies and delivering new products at an international level. He's also in charge of overseeing the strategic direction for SESB's fluids and chemical systems in global oil & gas applications. Vick holds a Bachelor Degree in Chemical Engineering from the Malaysian University of Technology and is a member of the Society of Petroleum Engineers. He is also a registered practicing engineer with Board of Engineers, Malaysia.

ARCHANA VENUGOPAL

Texas Instruments, USA

She is a Technologist in Texas Instruments: Analog Technology Development (ATD) group. Over the past eight years, she has immersed herself in graphene research at the University of Texas at Dallas (UTD) and at Texas Instruments – and she is making quite a name for herself in the research community.

She is interested in the development of two-dimensional materials such as graphene. Archana is recognized around for her contributions to research in the form of ATD-Kilby Labs projects, her ATD “Breakthrough Ideas” projects and direct-funded university projects related to graphene. Archana has invented or co-invented more than a dozen projects and has filed (or is in the process of filing) 13 patent applications -12 related to her work on graphene.



WAN RAIHANA WAN AASIM

Malaysian Technology Development Corporation (MTDC),
Malaysia

She is an Assistant Vice President at Malaysian Technology Development Corporation (MTDC). At MTDC, her role is to conduct assessment and due diligence on technologies to be commercialised under MTDC's funding programme.

During the three years that Wan Raihana has been at MTDC, she has worked closely with researchers, entrepreneurs and government officials and gained extensive experience in technology transfer and commercialisation.

Prior to joining the corporate world, Wan Raihana was a researcher at the BRAINetwork Centre for Neurocognitive Science of Universiti Sains Malaysia. During her time there, she headed a research team that studied the role of brain steroids in memory and learning. Wan Raihana has 10 years experience in Analytical Chemistry and is a Subject Matter Expert in gas chromatography for the American Chemical Society. She is also a certified HRDF trainer, specialising in subjects related to neurocognition and emotional intelligence.



WON JONG YOO

Samsung-SKKU Graphene-2D Center (SSGC), South Korea

Received his BS and MS degrees from Seoul National University in Korea. In 1993, he received his Ph.D. degree from Rensselaer Polytechnic Institute in USA in the area of the plasma etching properties of Si and SiO₂. Before joining Sungkyunkwan University (SKKU) in 2006, he was an associate professor with National University of Singapore (NUS) where he conducted his research on silicon devices and plasma processes.

His main industrial experiences were research and development in the areas of semiconductor material/device processes at Samsung Semiconductor Research Center, Korea and IBM Research Center. He is currently leading the collaboration research between Samsung and SKKU for developing future graphene devices as the director of Samsung-SKKU Graphene Center. The areas of his current research interests are the electronic and photonic application of 2-dimensional materials including graphene and transition metal dichalcogenides, the fabrication of novel devices using 2-dimensional materials, and the electrical property of memory devices using nano-structures. He has authored or co-authored about 200 journal and conference papers.





HONGWEI ZHU

Tsinghua University, China

He is a Professor of School of Materials Science and Engineering, CNMM Researcher, affiliated Faculty of Graduate School at Shenzhen, Tsinghua University.

He received his B.S. degree in Mechanical Engineering (1998) and Ph.D. degree in Materials Processing Engineering (2003) at Tsinghua University. After Post Doc. studies in Japan and USA, he began his independent career as a faculty member at Tsinghua University (2008~present). His research involves multi-scale synthesis and assembly, characterizations and applications of nanomaterials. He has authored 2 books and 6 invited book chapters, received 15 CN patents, 1 US patent and published 200+ papers with a H-index of 46.

ORGANISERS

PHANTOMS FOUNDATION



The Phantoms Foundation based in Madrid, Spain, focuses its activities on Nanoscience and Nanotechnology (N&N) and is now a key actor in structuring and fostering European Excellence and enhancing collaborations in these fields. The Phantoms Foundation, a non-profit organisation, gives high level management profile to National and European scientific projects (Involved in 11 European projects in the last 10 years either as coordinator or partner) and provides an innovative platform for dissemination, transfer and transformation of basic nanoscience knowledge, strengthening interdisciplinary research in nanoscience and nanotechnology and catalysing collaboration among international research groups.

The Foundation also works in close collaboration with Spanish and European Governmental Institutions to provide focused reports and catalogues on N&N related research areas:

- Coordinator/Editor of the Catalogue of Nanoscience & Nanotechnology Companies in Spain (published for the 6th time), which provides a general overview of the Nanoscience and Nanotechnology companies in Spain and in particular the importance of this market research, etc.
- The most recent document is the Catalogue of Graphene companies worldwide, which provides a general overview of the Graphene industry worldwide in this emerging field and in particular the importance of this market research, etc. Editions: 2014, 2015 and 2016.

Currently, one of the main core activities is to organize International conferences, meetings and workshops in particular in the “Graphene and 2D Materials” area:

- Graphene Conference Series main organizer www.grapheneconf.com
- Graphene Canada Conference Series main organizer www.graphenecanadaconf.com
- graphIn International Symposium (Graphene Industry – Challenges & Opportunities) main organizer www.graphinconf.com
- grapChina Conference Series co-organizer www.grapchina.com

More info: www.phantomsnet.net

NANOMALAYSIA BERHAD



NANOMALAYSIA™

In the National Innovation Council meeting on the 29th of October 2009 chaired by the Right Honorable Prime Minister, Nanotechnology was identified as one of the new growth engines for the New Economic Model (NEM).

On the 14th of February 2011, the National Innovation Council convened and agreed that a nanotechnology commercialisation agency was needed and corresponding activities must be aligned with Agensi Inovasi Malaysia's (AIM) initiatives.

NanoMalaysia Berhad was incorporated in 2011 as a company limited by guarantee (CLG) under the Ministry of Science, Technology and Innovation (MOSTI) to act as a business entity entrusted with nanotechnology commercialisation activities. Some of its roles include:

- Commercialisation of Nanotechnology Research and Development
- Industrialisation of Nanotechnology
- Facilitation of Investments in Nanotechnology
- Human Capital Development in Nanotechnology

More info: www.nanomalaysia.com.my

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STRATEGIC PARTNERS



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National Graphene Action Plan 2020 (NGAP 2020)

The National Graphene Action Plan 2020 (NGAP 2020) lays the foundation for Malaysia to catalyse several existing and emerging industries to increase global competitiveness. It is a result of an extensive collaboration between the Malaysian government, private sectors, companies, domestic and international research institutes and academia to assess how Malaysia can benefit from the potential of Graphene.

Key focus areas under the National Graphene Action Plan 2020 include :

1. Rubber
2. Plastics
3. Nanofluids
4. Li-ion battery/ ultracapacitor
5. Conductive ink

Delivery Framework :

1. Awareness building & facilitating “projects”.
2. Access to R&D funding and prototyping.
3. Information on graphene supply.
4. Access to technical experts.
5. Scale up support.
6. Coordinating implementation and monitoring process

Visit our website: www.nanomalaysia.com.my

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Incorporated as a statutory body under the Malaysian Industrial Development Authority (MIDA) Act, the establishment of MIDA in 1967 was hailed by the World Bank as "the necessary impetus for purposeful, positive and coordinated promotional action" for Malaysia's industrial development. Today, MIDA's is Malaysia's cutting-edge, dynamic and pioneering force in opening pathways to new frontiers around the globe. MIDA assists companies which intend to invest in the manufacturing and services sectors, as well as facilitates the implementation of their projects. The wide range of services provided by MIDA include providing information on the opportunities for investments, as well as facilitating companies which are looking for joint venture partners.

For more information: www.mida.gov.my

EXHIBITORS



RGS Corporation Sdn. Bhd.

(Company No: 864802-V)

RGS Corporation is representing a well know high-end analytical equipment manufacturers providing a solution to customer through scientific discovery, technological development, reliable products and highest quality of support. One of our principle, TechnoSpex Pte Ltd is a manufacturer and developer specializing in micro-spectroscopy for both scientific and industrial markets. We provide complete systems or compact modules that integrate seamlessly with the most upright dark field, polarization, DIC and/or fluorescence microscopes, with mapping capability option. Our uRaman and uSight series of products provide users with state-of-the-art spectroscopy measurement down to 1um spot size with research grade performance, and yet remains highly compact and affordable.

Website : www.rgscnet.com

www.technospex.com



Aseptec Sdn Bhd is a distributor of WITec for high-resolution optical and scanning probe microscopy solutions for scientific and industrial applications. WITec's product line features scanning near-field optical microscopy using unique cantilever technology, confocal Raman Imaging and Scanning Electron Microscopy designed for the highest sensitivity and resolution, and Atomic Force Microscopy (AFM) for materials research and nanotechnology. The modular design of WITec microscopes allows the combination of these techniques. Thus not only chemical information, but also structural and topographic information can be acquired at the same time and on the same sample area using one instrument and one operating system—all from the same manufacturer. WITec's innovations in Spectroscopy, Materials Characterization and Atomic Force Microscopy continue to redefine what is possible for a wide variety of optical, structural, and chemical imaging techniques.

For more information: aseptec.com.my



Anton Paar

Anton Paar develops, produces and distributes highly accurate laboratory instruments and process measuring systems, and provides custom-tailored automation and robotic solutions. It is the world leader in the measurement of density, concentration and CO₂ and in the field of rheometry. Anton Paar GmbH is owned by the charitable Santner Foundation.

Over 2300 employees at the headquarters in Graz and the 25 sales subsidiaries worldwide ensure that Anton Paar products live up to their excellent reputation. The core competence of Anton Paar – high-precision production – and close contact to the scientific community form the basis for the quality of Anton Paar's instruments.

For more information: www.anton-paar.com



Lab Alliance Sdn Bhd is a Malaysia based company incorporated in 2001 with its core business focus in distributing analytical, life sciences and material characterization instruments. LabAlliance's motto "Exploring Scientific Possibilities", wholly acknowledge, respects and supports client's ideas and further position value added inputs to help our customer achieves their research goal.

Whether a laboratory is engaged in academic research, environmental testing, medical diagnostics, pharmaceuticals, petrochemicals or food testing, LabAlliance is able to provide laboratory solutions from a wealth of technologies to meet their full spectrum of needs. We work closely with technology manufacturers and customers to help address global trends that impact human health and the environment, and to anticipate future scientific needs. We believe we have the needed solutions to improve the efficiency of the entire laboratory, from sample prep to data interpretation and management.

For more information: laballiance.com.my



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DropSens instrument for combined electrochemical and spectroscopic measurements (spectroelectrochemical analysis) in the areas of new materials characterization, photochemical energy conversion, and photovoltaic cell research.

For more information: www.metrohm.com

The logo for anexus, with the word in a lowercase, sans-serif font. A small yellow dot is positioned above the letter 'x'.

Make It Happen

aNexus group of companies are the only established distributor, service provider and application center for functional material and technologies, including inkjet, coating, printing, photonic curing, nano imprint, CVD, graphene roll to roll and other advance technologies from research to production in Asia. Besides providing turnkey solutions, our line of products includes the leaders in respective field for printer, coater, flash lamp sintering system, inks, etc, i.e. Fujifilm Dimatix, Coatema, Aixtron, Xenon, and many more. We can provide equipment, material, process and turnkey start up solutions in the area of inkjet graphene, coated graphene, CVD graphene and 2D materials.

For more information: anexuscorp.com

The logo for NEXUS ANALYTICS. The word 'NEXUS' is in red with a blue horizontal bar through the 'E'. Below it, 'ANALYTICS' is in blue. Underneath, the tagline 'Delivering Advanced Analytical Solutions' is written in a smaller, red font.

As a leader in the distribution and support of scientific research products in South East Asia, Nexus Analytics Sdn Bhd represents renowned manufacturers from around the world in providing current and next-generation tools and technologies focusing on integrated solutions and applications, including comprehensive service support to meet your growing needs; from consultation, development and implementation of customized solutions to integrating, installing, commissioning and providing world class technical support.

We exclusively represent and support leading brands of analytical instruments and consumables including: FT-IR, FT Raman, Dispersive Raman and NIR spectrometers (Thermo Fisher Scientific) HPTLC and Flash Chromatography systems and supplies (CAMAG & Biotage) Mercury & Arsenic analyses (PSA) Automated and manual Sample Preparation systems (Biotage) Particle & Powder characterization (Horiba, FreemanTech, Fluidimaging) Thermal & Thermophysical Analysis (Netzsch)

These instruments are essential for both Q/C and Research, for the analysis of materials and semiconductors, chemicals and petrochemicals, food and agriculture, environmental, protein research, and are commonplace in most analytical labs in government regulatory and educational

For more information: www.nexus-analytics.com.my



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For more information: www.mida.gov.my



MIMOS SEMICONDUCTOR (M) Sdn. Bhd. provides R&D shared facilities and services as part of the Malaysian Economic Transformation Programme (ETP) under the Electrical and Electronics National Key Economic Area (E&E NKEA). We aim to be a major catalyst for the development of the E&E industry in Malaysia and the region by offering a flexible engagement model, short turnaround time and integrated value-added services at competitive prices. Among the services offered are Failure Analysis/Material Analysis, Reliability Testing, Wafer & IC Testing, IC Design, Wafer Fabrication & Wafer Prototyping, Rapid Product Prototyping, Nano & MEMS Fabrication & Synthesis, Nanocharacterisation (under the NANOVerify programme) and Hands-On Skills Development Programme

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Crest was founded in 1999 whereby our foundation is built based on specialization in advanced microscopy imaging and leading-edge analytical solutions. Since its inception, Crest Group has grown to a team of more than 110 employees with a strong regional reputation of having the largest technical support group in SEA. Together with global key partners, Crest strive to provide customers market leading technological solutions in enabling important discoveries, enhancing imaging and analytical capabilities as well as achieving higher productivity. Our customers and applications include electronics, nanotechnology, material sciences, life sciences, academia, petrochemical, pharmaceutical and industrial manufacturing.

For more information: crest-group.net



Founded in 2011, Grafoid Inc. is a graphene research, development and investment company that invests in, manages and develops markets for processes that produce economically scalable graphene for use in graphene development applications by leading corporations and institutions. Grafoid's leading investment produces application friendly, minimal-defect, high-energy density few layer graphene, utilizing a safe, non-destructive extraction process, leaving the lowest possible ecological footprint. The completely unique, proprietary process results in what Grafoid regards as a new global standard for economically scalable, high-purity graphene products - trademarked under the MesoGraf™ trade name - that can be tailored to both industrial and commercial applications.

For more information: www.grafoid.com



QuantumWise develops simulation software which enables the simulation of electrical and other materials properties at the atomic-scale. The software is used by major semiconductor companies and a growing presence in the chemical and materials industry, as well as several hundred universities and government labs. The company builds on the long tradition for quantum mechanical research in Denmark and employs a team of top researchers with PhD's in physics, chemistry or computer science. The Company, started in 2008, has more than 30 employees worldwide. It has recent years shown 30% growth rates. It is awarded 2015 and 2016 Børsen Gazelle company.

For more information: www.quantumwise.com



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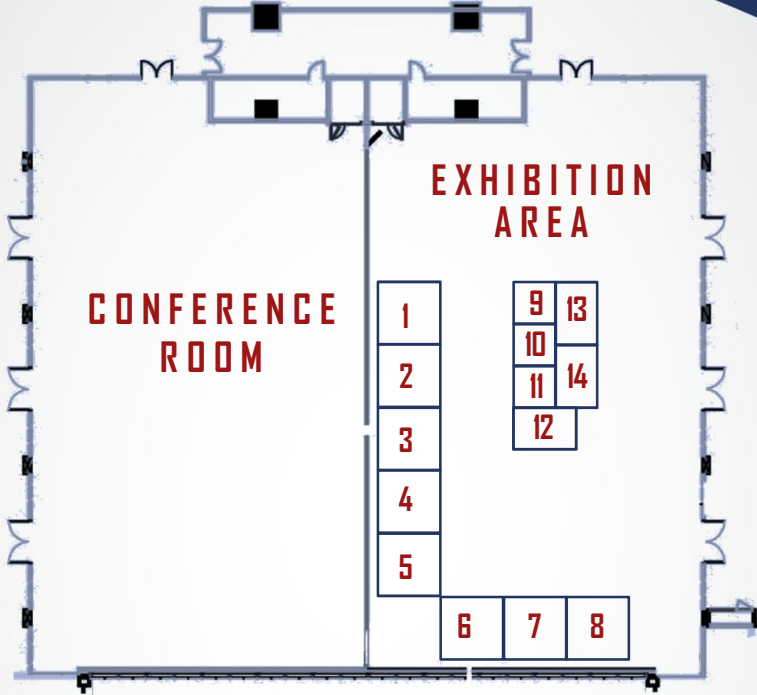
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MALAYSIAN INVESTMENT DEVELOPMENT AUTHORITY

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3 **NEXUS**
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Delivering Advanced Analytical Solutions

4  **ASEPTEC**
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5  **Anton Paar**

6 **MIMOS**
SEMICONDUCTOR

7  **GRAFOID**

8  **RSC Corporation Sdn. Bhd.**
(Company No. 960102-D)

9  **M-Lab**
Alliance

10 **anexus**
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11  **QUASI-5**
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12  **crest**
One Company, One Mission

13  **Metrohm**
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14 **Quantum**
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