



EK 5

EK Tier 5 Presentation

RIG/centre:

MATERIALS FOR ENERGY AND SENSOR

CoRe:

FRONTIER MATERIALS AND INDUSTRIAL APPLICATION

Faculty:

**FACULTY OF APPLIED SCIENCES & FACULTY OF
CHEMICAL ENGINEERING**



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CHEMICAL ENGINEERING**

BACKGROUND OF MEMBERS



LEADER: ASSOCIATE PROF. DR NAFISAH OSMAN

Faculty: Faculty of Applied Sciences, UiTM Perlis Branch, Arau Campus, Perlis

Qualification: PhD, Universiti Kebangsaan Malaysia

Area of Expertise: Solid State Ionics, Advanced Materials, Materials Chemistry, Powder Processing, Impedance Spectroscopy, Solid Oxide Fuel Cell



DR NUR HIDAYATI OTHMAN

Faculty: Faculty of Chemical Engineering, UiTM Shah Alam

Qualification: PhD, Imperial College London

Area of Expertise: Fuel cell, Nanomaterials, Catalysis



DR ANG LEE SIN

Faculty: Faculty of Applied Sciences, UiTM Perlis Branch, Arau Campus, Ps
Qualification: PhD, Universiti Sains Malaysia

Area of Expertise: Solid State Physics, First Principles Calculations



DR ABDUL MUTALIB MD JANI

Faculty: Faculty of Applied Sciences, UiTM Tapah, Perak

Qualification: PhD, University of Adelaide, Australia

Area of Expertise: Self-Assembly and Synthesizing of Nanoporous Materials, Sensing, Drug Delivery



HANANI YAZID

Faculty: Faculty of Applied Sciences, UiTM Perlis Branch, Arau Campus, Ps
Qualification: MSc, Universiti Sains Malaysia

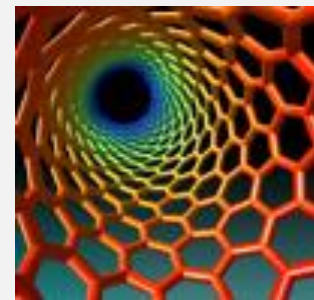
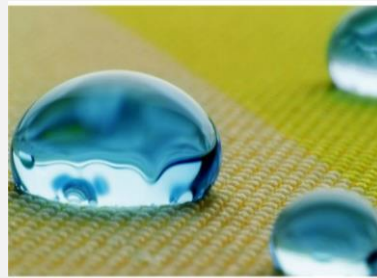
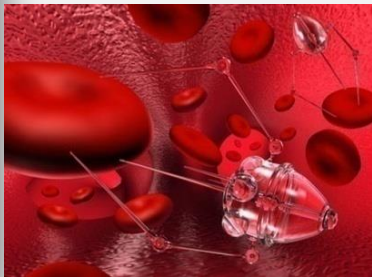
Area of Expertise: Nanomaterials, Gold Nanoparticles, Catalysis

About Us

- This group was formed in **2003** with the name of **Advanced Material Group**.
- The group's name was changed to **Solid State Ionic Group (SSIG)** in **2010**.
- **2014:** The SSIG group then **co-operated** with **Nanotechnology Group** and named the group with **Physics and Chemistry Materials Research Group (PCMaG)**. In the beginning, the PCMaG focused on the protonic conducting materials and materials for biosensor as its research interest.

- Our interdisciplinary research bridges **applied chemistry, physics, nanoscience** and **materials science**.
- We are probing fundamental chemistry and physics at nanoscale and developing nanomaterials and devices for next generation **solid oxide fuel cells (SOFCs), biosensor** and **energy conversion**.
- Year 2018:

“MATERIALS FOR ENERGY AND SENSOR”



RESEARCH GRANTS (2015 - 2018)

No	Grant Record	Detail
1	Research Grant of EK-Leader	
	No of Research Grant	6
	Total Amount (RM)	RM 730 500.00
2	Total Amount (RM) of Research Grant (including members)	RM 1 484 250.00

LIST OF RESEARCH GRANT (2015-2018)

BIL	NAMA PENYELIDIK UTAMA	NAMA PROJEK	JENIS	AGENSI PEMBIAYA	STATUS	TARIKH MULA	TARIKH TAMAT	JUMLAH PEMBIAYAAN (RM)
1	Nafisah Osman	Diffusivity and Kinetic Reaction of Charge Carrier Species at Triple Phase Boundary of Composite Cathode	Geran	FRGS, KPT	In progress	15/8/2017	14/8/2019	56,000.00
2	Nafisah Osman	Synthesis, electrical properties and thermal expansion behaviour of Ba(Ce,Zr) ₀₃ electrolyte as proton conductor	Geran	TRGS, KPT	In progress	1/12/2016	30/11/2019	327,000.00
3	Nafisah Osman	Fabrication of NiO-Ba(Ce,Zr)O ₃ Anode-Supported Button Cell For High Power Proton Conducting Fuel Cell	Geran	PRGS, KPT	In progress	1/12/2015	30/11/2017	104,500.00
4	Nafisah Osman	Generation and transportation of oxygen ions at the cathode functional layer	Geran	FRGS, KPT	Complete	1/7/2014	30/6/2016	86,000.00
5	Nafisah Osman	Processing Cerate-Zirconate Nanopowder At Supercritical Conditions Via Batch-Wise Reactor System	Geran	ERGS, KPT	Complete	1/6/2013	31/5/2016	113,000.00
6	Nafisah Osman	Oxide Cathode Chemical Compatibility Against Cerate-Zirconate Electrolyte	Geran	RACE	Complete	1/12/2012	1/12/2015	50,000.00
7	Nur Hidayati Othman	Adsorbtion mechanism and kinetic behaviour of Fe ₃ O ₄ magnetic graphene (Fe ₃ O ₄ -Mg) Nanocomposite	Geran	FRGS, KPT	In progress	2017	2019	99,250.00
8	Nur Hidayati Othman	Surface-Modified Micro-Structured Lanthanum Strontium Cobalt Ferrite (LSCF) Hollow Fibre Membrane by Using Metal Oxide Catalyst for Improvement of Surface Activity	Geran	RAGS, KPT	2015	2017	AKTIF	53,000.00
9	Abd Mutalib Md Jani	Influence of Activated Carbon from Empty Fruit Bunches (EFB) on Synthesising Low Temperature and High Purity Nanocrystalline BaCeZrO ₃ Ceramic Electrolyte	Geran	TRGS, KPT	2016	2016	AKTIF	113,500.00

LIST OF RESEARCH GRANT

BIL	NAMA PENYELIDIK UTAMA	NAMA PROJEK	JENIS	AGENSI PEMBIAYA	STATUS	TARIKH MULA	TARIKH TAMAT	JUMLAH PEMBIAYAAN (RM)
10	Abd Mutalib Md Jani	Development of functionalized nanoporous anodic aluminium oxide for biosensing device application	Geran	E-Science Fund, KPT	Complete	2014	2017	110,000.00
11	Abd Mutalib Md Jani	Controlled Assembly of LSCF/Nanorod-BCZY Composites at Cathode Functional Layer	Geran	FRGS, KPT	Tamat	2015	2017	75,000.00
12	Abd Mutalib Md Jani	Template synthesis of perovskite nanorods: formation and properties	Geran	FRGS, KPT	Tamat	2013	2015	86,000.00
13	Ang Lee Sin	Structural and Electronic Structure of the Ligand-Metal Complexes in the Formation of Cerate-Zirconate	Geran	RAGS, KPT	Tamat	2013	2015	69,000.00
14	Hanani Yazid	Effect of the Au Particle Size on Catalytic Activity of Au-Grafted Nanoporous Aluminium Oxide	Geran	RAGS, KPT	2013	2016	TAMAT	80,000.00
15	Hanani Yazid	Controlled Assembly of Gold Nanoparticles on Nanoporous Anodic TiO ₂ Membrane by Spin Coating Technique for Reduction of p-Nitrophenol	Geran	FRGS, KPT	2016	2018	AKTIF	62,000.00

LIST OF POSTGRADUATES (RESEARCH)

BIL	NAMA PENYELIA	STATUS PENYELIAAN	NAMA PELAJAR	FAKULTI	TAHUN KEMASUKAN	TAHUN TAMAT PENGAJIAN	PERINGKAT PENGAJIAN	KOD PROGRAM	JENIS PENGAJIAN (FT / PT)	STATUS PENGAJIAN	JENIS PEMBIAYAAN
1	Nafisah Osman	Penyelia Utama	Nur Athirah bt Abdullah	FSG	2010	2013	MSc	AS780	FT	Tamat	Geran
2	Nafisah Osman	Penyelia Utama	Abdullah bin Samat	FSG	2010	2014	MSc	AS780	FT	Tamat	Geran
3	Nafisah Osman	Penyelia Utama	Najwa 'Adni bt Ibarahim	FSG	2010	2014	MSc	AS780	FT	Tamat	Geran
4	Nafisah Osman	Penyelia Bersama	Nurul Asyikin Mazlan	FSG	2013	2017	MSc	AS780	FT	Tamat	Geran
5	Nafisah Osman	Penyelia Utama	Ismariza Ismail	FSG	2013	2016	PhD	AS950	FT	Aktif	Geran
6	Nafisah Osman	Penyelia Bersama	Abdullah bin Samat	Institut Sel Fuel, UKM	2015	2018	PhD	-	FT	Aktif	Geran
7	Nafisah Osman	Penyelia Bersama	Anisah Habiballah	FSG	2013	2016	PhD	AS950	FT	Aktif	Geran
8	Nafisah Osman	Penyelia Utama	Lidayatty Abdul Malik	FSG	2018	2021	PhD	AS950	FT	Aktif	Geran
9	Nafisah Osman	Penyelia Utama	Nurul Waheeda Mazlan	FSG	2017	2019	MSc	AS759	FT	Aktif	Geran
10	Nafisah Osman	Penyelia Utama	Wan Zuliana Wan Zulkifli	FSG	2014	2016	MSc	AS757	FT	Aktif	Geran
11	Nafisah Osman	Penyelia Utama	Nur Syafkeena Mohd Affandi	FSG	2017	2019	PhD	AS950	FT	Aktif	Geran
12	Nafisah Osman	Penyelia Utama	Shazana Mohd Senari	FSG	2015	2017	MSc	AS757	FT	Aktif	Geran

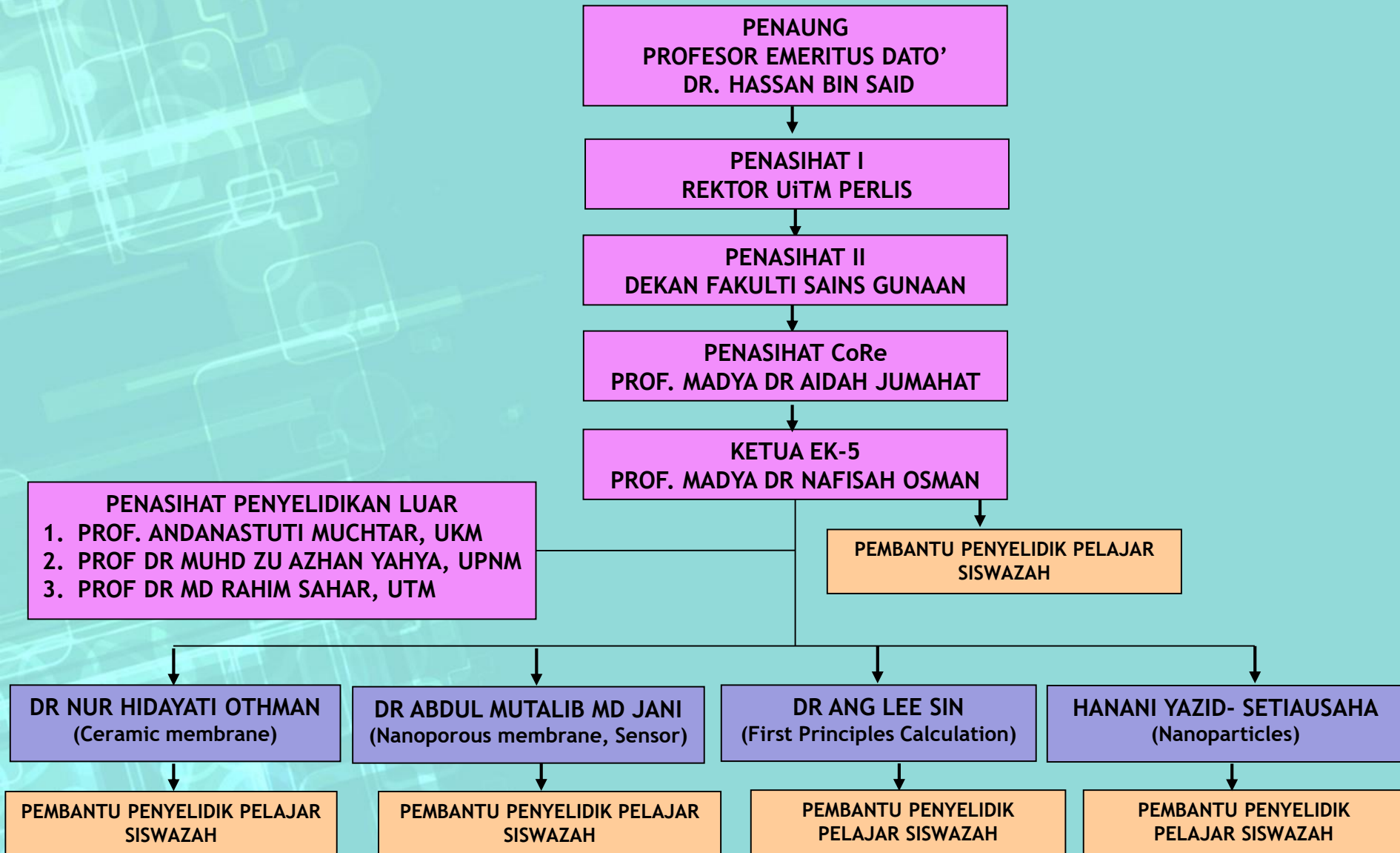
BIL	NAMA PENYELIA	STATUS PENYELIAAN	NAMA PELAJAR	FAKULTI	TAHUN KEMASUKAN	TAHUN TAMAT PENGAJIAN	PERINGKAT PENGAJIAN	KOD PROGRAM	JENIS PENGAJIAN (FT / PT)	STATUS PENGAJIAN	JENIS PEMBIAYAAN
13	Nafisah Osman	Penyelia Bersama	Nurul Afifah Mahmud	FSG	2017	2019	MSc	AS757	FT	Aktif	Geran
14	Nafisah Osman	Penyelia Utama	Nurul Izzati Abd Malek	FSG	2018	2020	MSc	AS757	FT	Aktif	Geran
15	Nur Hidayati Othman	Penyelia Utama	'Ainun Sailah Sihar	FKK	2015	2018	MSc	EH750	FT	Aktif	Geran
16	Nur Hidayati Othman	Penyelia Utama	Nurul Fattin Diana Junaidi	FKK	2016	2018	MSc	EH750	FT	Aktif	Geran
17	Nur Hidayati Othman	Penyelia Utama	Siti Samihah Binti Mahmood	FKK	2014	2018	MSc	EH750	FT	Aktif	Geran
18	Nur Hidayati Othman	Penyelia Utama	Azwan bin Harun	FKK	2015	2018	MSc	EH750	FT	Aktif	Geran
19	Nur Hidayati Othman	Penyelia Utama	Najihah binti Jamil	FKK	2016	2018	PhD	EH950	FT	Aktif	Geran
20	Nur Hidayati Othman	Penyelia Bersama	Mohamad Fiqri Zainuddin	FKK	2016	2018	MSc	EH750	FT	Aktif	Geran
21	Nur Hidayati Othman	Penyelia Bersama	Salinda Ab Ghani	FKK	2016	2019	PhD	EH950	FT	Aktif	Geran
22	Abd Mutalib Md Jani	Penyelia Utama	Anisah Shafikah Habiballah	FSG	2015	2018	PhD	AS950	FT	Aktif	Geran
23	Abd Mutalib Md Jani	Penyelia Utama	Farah Wahida Ahmad Zulkifli	FSG	2016	2018	MSc	AS757	FT	Aktif	Geran
24	Abd Mutalib Md Jani	Penyelia Utama	Nurul Afifah Mahmud	FSG	2017	2019	MSc	AS757	FT	Aktif	Geran
25	Abd Mutalib Md Jani	Penyelia Bersama	Ismariza Ismail	FSG	2013	2018	PhD	AS990	FT	Aktif	Geran

BIL	NAMA PENYELIA	STATUS PENYELIAAN	NAMA PELAJAR	FAKULTI	TAHUN KEMASUKAN	TAHUN TAMAT PENGAJIAN	PERINGKAT PENGAJIAN	KOD PROGRAM	JENIS PENGAJIAN (FT / PT)	STATUS PENGAJIAN	JENIS PEMBIAYAAN
26	Abd Mutalib Md Jani	Penyelia Bersama	Shazana Mohd Senari	FSG	2014	2018	MSc	AS757	FT	Aktif	Geran
27	Abd Mutalib Md Jani	Penyelia Utama	Abdul Hadi Mahmud	FSG	2013	2017	MSc	AS757	FT	Tamat	Geran
28	Abd Mutalib Md Jani	Penyelia Utama	Nurul Asyikin Mazlan	FSG	2013	2017	MSc	AS757	FT	Tamat	Geran
29	Abd Mutalib Md Jani	Penyelia Utama	Muhammad Zikri Budiman Abdul Halim	FGS	2014	2017	MSc	AS757	FT	Tamat	Geran
30	Ang Lee Sin	Penyelia Utama	Nor Ain Fathihah Abdullah	FSG	2014	2018	MSc	AS757	FT	Aktif	Geran
31	Ang Lee Sin	Penyelia Utama	Nur Najwa Alyani Mohd Nabil	FSG	2015	2018	MSc	AS757	FT	Aktif	Geran
32	Hanani Yazid	Penyelia Bersama	Farah Wahida Ahmad Zulkifli	FSG	2016	2018	MSc	AS757	FT	Aktif	Geran

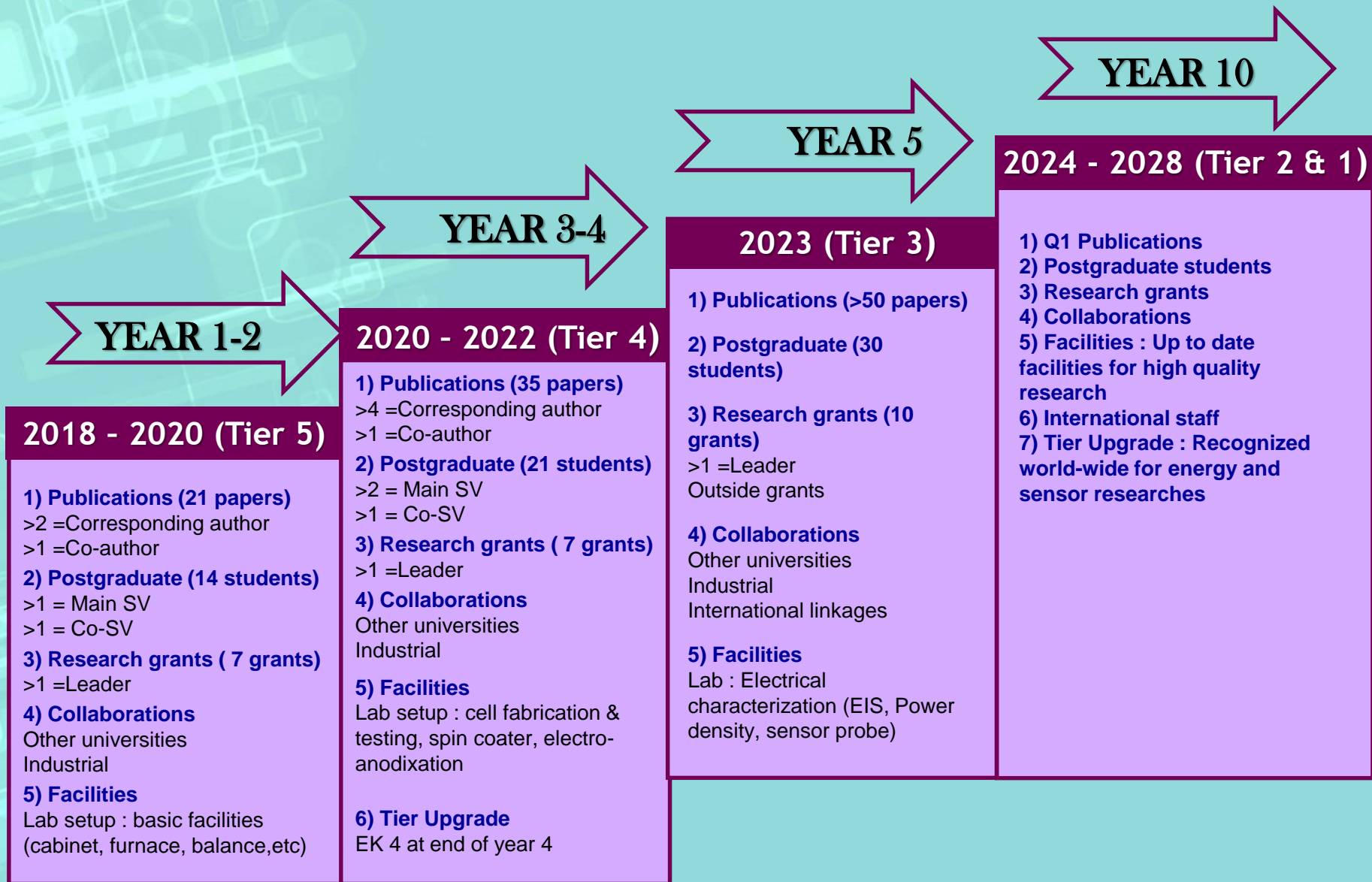
NICH AREA AND RELEVANCE OF RIG

- To carry out fundamental and applied research related to the **materials** for renewable energy and sensor applications
- To discover and fabricate **new materials** and designs, and further develop fundamental understanding of the relationship between the **materials** and its characteristic towards renewable energy and sensor application
- To carry out computational study of the prepared **materials** by using specific software for better understanding of **materials** properties at microscopic scale.

ORGANIZATIONAL CHART



RIG RESEARCH ROADMAP (5/10 YRS)



LIST OF PUBLICATIONS

ASSOC. PROF. DR. NAFISAH

No.	Publication
1.	I. Ismail, A.M. Jani and N Osman. 2018. "Preparation of Nano-Structured Cathode for Proton Conducting Fuel Cell by Dispersing Agent Assisted Sol-Gel Method", Materials Science Forum, Vol. 917: 78-82. {SCOPUS}
2.	A. A. Samat, A.A Jais, M. R. Somalu, N. Osman, A. Muchtar and K.L.Lim. 2018. "Electrical and Electrochemical Characteristic of $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ Cathode Materials Synthesized by a Modified Citrate-EDTA Sol-gel Method Assisted With Activated Carbon for Proton-conducting Solid Oxide Fuel Cell Application". J Sol-Gel Sci Technol, DOI 10.1007/s10971-018-4675-1 {Impact Factor 1.575}
3.	A. Ramli, M.N.A. Bakar, N. Osman, W. I. N. W. Ismail and S. Sepeai. 2018. "Characterization of Novel Nitrogen-less derived 2D hybrid perovskite of $\text{C}_6\text{H}_8\text{N}_2\text{PbBr}_3$ as a Light-Harvesting Material for Perovskite Solar Cell Application", Materials Letter, Vol. 227: 62-65 {Impact Factor 2.572}
4.	A. A. Samat, M. R. Somalu, A. Muchtar, O. H. Hassan and N. Osman. 2018. "Heat Treatment Effect on the Phase and Morphology of NiO-BCZY Prepared by an Evaporation and Decomposition of Solution and Suspension Method". Sains Malaysiana, Vol. 47(3): 589-594 {Impact Factor 0.470}
5.	I. Ismail, N Osman and A.M. Jani. 2018. "Evaluation of $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.2}\text{Fe}_{0.8}\text{O}_{3-\delta}$ as a Potential Cathode for Proton-Conducting Solid Oxide Fuel Cell". Sains Malaysiana, Vol. 47(2): 387-391 {Impact Factor 0.470}
6.	I. Ismail, A.M. Jani and N Osman. 2018. "Preparation of Nano-structured Cathode for Proton Conducting Fuel Cell by Dispersing Agent-assisted Sol-gel Method". Materials Science Forum, Vol. 917: 78-82. {SCOPUS}
7.	A. S. Habiballah, N Osman and A.M. Jani. 2017. "A New Route of Synthesizing Perovskite Nanotubes by Templating Approach", AIP Conference Proceedings 1877, 030006 (2017); doi: 10.1063/1.4999862; pp: 1-7 {SCOPUS}
8.	I. Ismail, A.M. Jani and N Osman. 2017. "Microstructure Control of SOFC Cathode Material: The Role of Dispersing Agent", AIP Conference Proceedings 1877, 030004 (2017); doi: 10.1063/1.4999860; pp 1-6 {SCOPUS}

No.	Publication
9.	A. S. Habiballah, I. Ismail, N Osman and A.M.M Jani. 2017. “La _{0.6} Sr _{0.4} Co _{0.2} Fe _{0.8} O _{3-δ} (LSCF64) perovskite nanotubes via sol-gel template synthesis”, AIP Conference Proceedings 1885, 020234 (2017); doi: 10.1063/1.5002428; pp: 1-6 {SCOPUS}
10.	A. Ramli, N. Osman and N.W. Othman. 2017. “Effect of Double Heat Treatment Profile on Ba(Ce,Zr)O ₃ Sintered Pellet”, Journal of Engineering and Science Research 1(2): 79-84 {SCOPUS}.
11.	N.A. Mazlan, N Osman, A.M. Jani and M.H. Yaakob and. 2016. “Role of Ionic and Nonionic surfactant on the Phase Formation and Morphology of Ba(Ce,Zr)O ₃ Solid Solution”, J Sol-Gel Sci Technol, 78:50-59 {Impact Factor 1.473}
12.	A. A. Samat, M. R. Somalu, A. Muchtar, O. H. Hassan and N. Osman. 2016. “ LSC Cathode Prepared by Polymeric Complexation Method for Proton Conducting SOFC Application”, J Sol-Gel Sci Technol, 78(2): 382-393 {Impact Factor 1.473}
13.	I. Ismail, N Osman and A.M. Jani. 2016. “Tailoring the Microstructure of La _{0.6} Sr _{0.4} Co _{0.2} Fe _{0.8} O _{3-α} Cathode Material: The Role of Dispersing Agent”, J Sol-Gel Sci Technol, 80(2): 259-266 {Impact Factor 1.473}
14.	A. S. Habiballah, A.M. Jani, A. H. Mahmud, N Osman and S. Radiman. 2016. “Facile Synthesis of Ba _{0.5} Sr _{0.5} Co _{0.8} Fe _{0.2} O _{3-δ} (BSCF) Perovskite Nanowires by Templating from Nanoporous Anodic Aluminium Oxide Membranes”, Mater. Chem. Phy, 177: 371-378 {Impact Factor 2.101}
15.	N Osman, I. Ismail, A. A. Samat and A.M. Jani. 2016. “Reactivity Study of LaSrCoFeO ₃ -Ba(Ce,Zr)O ₃ Composite Cathode Material”, Materials Science Forum, Vol. 846: 58-62. {SCOPUS}
16.	N.A. Mazlan, N Osman, A.M. Jani and M.H. Yaakob. 2016. “Role of Ionics Surfactant in Synthesizing Cerate-Zirconate Ceramic Powder”, Materials Science Forum, Vol. 846: 205-209 {SCOPUS}
17.	N.W. Othman, N Osman, A. Ramli and S. D. Safian. 2016. “Microstructure of Barium Cerate-Zirconate-Ceramics Prepared by a Two Step Sintering Technique”, Materials Science Forum, Vol. 846: 199-204 {SCOPUS}
18.	S. D. Safian and N Osman. 2016. “Dielectric Relaxation Studies In The Proton Conductors, Yb-Doped Ba(Ce,Zr)O ₃ ”, Materials Science Forum, Vol. 864: 42-46 {SCOPUS}
19.	A. S. Habiballah, A. H. Mahmud, N Osman and A.M. Jani, 2016. “Ba _{0.5} Sr _{0.5} Co _{0.8} Fe _{0.2} O _{3-δ} (BSCF) perovskite nanorods by template synthesis”, Materials Science Forum, Vol. 864: 210-215 {SCOPUS}

No.	Publication
20.	A. A. Samat, M. R. Somalu, A. Muchtar, and N. Osman. 2016. "Preparation of Lanthanum Strontium Cobalt Oxide Powder by a Modified Sol-Gel Method", Malay. J. Analy. Sci., 20(6): 1458-1466. {SCOPUS}
21.	N. A. Ibarahim, N. Osman and M.A. M. Ishak. 2015. "Particle Size Distribution of Cerate-Zirconate Powder Prepared via Three Different Methods", Advanced Materials Research, Vol. 1108: 67-72. {SCOPUS}
22.	N. W. Othman, A. Ramli, N. Osman, S.S.C. Abdullah and M.E.A. Rahman. 2015. "A Study on Densification and Grain Growth of Ba(Ce,Zr)O ₃ Prepared by a Two Step Sintering", Materials Science Forum, Vol. 819: 129-133. {SCOPUS}
23.	N.A. Mazlan, N Osman, M.H. Yaakob and A.M. Jani. 2015. Effect of Surfactant on the Thermal Behaviour of Cerate-Zirconate Ceramics Powder Prepared by A Modified Sol-Gel Method", Materials Science Forum, Vol. 819: 140-145. {SCOPUS}
24.	N. Osman, N. A. Abdullah, N.A. Ibarahim and O. H. Hassan. 2015. "Morphology and Elemental Composition of Cerate-Zirconate Compound as-Prepared by a Sol-Gel Technique. Acta Physica Polonica A, 127 (4): 931-933. {Impact Factor 0.550}
25.	A. A. Samat, S. A. Safri, D. Samsudin, W. S. Jaafar and N. Osman. 2014. "Contact Formation at Interface of LSCO BCZY LSCO Symmetrical Cell: Effect of LSCO to PVP Ratio", Advanced Materials Research, Vol. 896: 175-178. {SCOPUS}
26.	N. Osman, N. A. Abdullah and S. Hasan. 2014. "Chelating Agent Role In Synthesizing Cerate-Zirconate Powder By a Sol-Gel Method", Advanced Materials Research, Vol. 896: 112-115 {SCOPUS}
27.	S. S. C. Abdullah, R. Abdullah and N. Osman. 2014. "Two-step Sintering of Fine Barium Cerate-Zirconate Ceramics Electrolyte", Key Engineering Materials Vol. 594-595: pp 962-966 {SCOPUS}
28.	A. A. Samat, M. A. M. Ishak and N. Osman. 2014. "Characterization of LSCO BCZY LSCO for potential application in IT-SOFC", Defect and Diffusion Forum, 353: 233-238. {SCOPUS}
29.	N. A. Ibarahim, M.A.M. Ishak, A Ramli and N. Osman. 2014. "Characterization of cerate-zirconate ceramic powder prepared by a high-pressure-high temperature batch-wise reactor system". International Journal of Industrial Chemistry, 5(2):1-6.

No.	Publication
30.	N. Osman, M.H. Yaakob and I. A. Talib. 2014. Effect of Metal Chloride Pre-Cursor on the Structure of Yb-Doped Ba(Ce,Zr)O ₃ Ceramics Electrolyte: A Comparative Study with Different Metal Salts. Sains Malaysiana, 43(9): 1429-1432. {Impact Factor 0.480}
31.	N. Osman, N. A. Ibarahim, M. A. M. Ishak and O. H. Hassan. 2014. Characterization of Cerate-Zirconate Ceramics Powder Prepared by Three Different Methods: A Comparative Study. Sains Malaysiana, 43(9): 1373-1378. {Impact Factor 0.480}

DR. NUR HIDAYATI OTHMAN

No.	Publication
1.	NH Othman, NH Alias, MZ Shahrudin, NFA Bakar, NRN Him, WJ Lau. 2018. Adsorption Kinetics of Methylene Blue Dyes onto Magnetic Graphene Oxide. Journal of Environmental Chemical Engineering.
2.	NH Alias, J Jaafar, S Samitsu, N Yusof, MHD Othman, MA Rahman. 2018. Photocatalytic degradation of oilfield produced water using graphitic carbon nitride embedded in electrospun polyacrylonitrile nanofibers. Chemosphere
3.	CY Chong, WJ Lau, N Yusof, GS Lai, NH Othman, T Matsuura, AF Ismail. 2018. Studies on the properties of RO membranes for salt and boron removal: Influence of thermal treatment methods and rinsing treatments. Desalination 428, 218-226
4.	A Sauki, NI Hasan, FBM Naimi, NH Othman. 2017. Development of environmental friendly lost circulation material from banana peel. AIP Conference Proceedings 1901 (1), 130016
5.	MFIA Fuad, KA Razak, NH Alias, NH Othman, NKINA Lah. 2017. Thermal spray coating for corrosion under insulation (CUI) prevention. AIP Conference Proceedings 1901 (1), 120008
6.	KA Razak, MFIA Fuad, NH Alias, NH Othman, MI Zahari. 2017. Effects of temperature on the corrosion behavior of coated carbon steel in 1 wt.% sodium chloride (NaCl) solution. AIP Conference Proceedings 1901 (1), 120007

No.	Publication
7.	NH Othman, NH Alias, MZ Shahrudin, SNCM Hussein, A Dollah. 2017. Supported graphene oxide hollow fibre membrane for oily wastewater treatment. AIP Conference Proceedings 1901 (1), 020008
8.	MF Zainuddin, NRN Him, NH Othman, MS So'aib, WFH Abdullah. 2017. Review on effects of hydrazine hydrate and L-ascorbic acid on electrical conductivity of graphene. AIP Conference Proceedings 1901 (1), 090004
9.	PFM Khamaruddin, A Sauki, NH Othman, A Kadr. 2017. Using moodle as an integrated final year project management system. Engineering Education (ICEED), 2017 IEEE 9th International Conference.
10.	AS Sihar, MZ Shahrudin, NH Alias, ANCA Rahim, NH Othman. 2017. Catalytic surface modification of alumina membrane for oxygen separation. Jurnal Teknologi 79 (1-2), 29-34
11.	MZ Shahrudin, N Zakaria, NFD Junaidi, NH Alias, NH Othman. 2016. Study of the Effectiveness of Titanium Dioxide (TiO ₂) nanoparticle in Polyethersulfone (PES) Composite Membrane for Removal of Oil in Oily Wastewater. Journal of Applied Membrane Science & Technology 19 (1)
12.	MZ Shahrudin, ISB Ishak, NH Othman, NH Alias, NA Ramlee. 2016. The effectiveness Study of Different Membranes in Treating Industrial Wastewater. MATEC Web of Conferences 69, 05001
13.	UN Rusli, NH Alias, MZ Shahrudin, NH Othman. 2016. Photocatalytic Degradation of Oil using Polyvinylidene Fluoride/Titanium Dioxide Composite Membrane for Oily Wastewater Treatment. MATEC Web of Conferences 69, 05003
14.	NH Othman, MZ Shahrudin, AS Sihar, Z Wu, K Li. 2016. In-Situ Catalytic Surface Modification of Micro-Structured La _{0.6} Sr _{0.4} Co _{0.2} Fe _{0.8} O _{3-δ} (LSCF) Oxygen Permeable Membrane Using Vacuum-Assisted technique. MATEC Web of Conferences 69, 05002
15.	NH Othman, Z Wu, K Li. 2015. Micro-structured Bi _{1.5} Y _{0.3} Sm _{0.2} O _{3-δ} catalysts for oxidative coupling of methane. AIChE Journal 61 (10), 3451-3458
16.	NH Othman, Z Wu, K Li. 2015. An oxygen permeable membrane microreactor with an in-situ deposited Bi _{1.5} Y _{0.3} Sm _{0.2} O _{3-δ} catalyst for oxidative coupling of methane. Journal of Membrane Science 488, 182-193
17.	MZSNHONHASNA Ghani. 2015. Desalination of Produced Water Using Bentonite as Pre-Treatment and Membrane Separation as Main Treatment. Procedia - Social and Behavioral Sciences 195, 2094-21000

DR. ANG LEE SIN

No.	Publication
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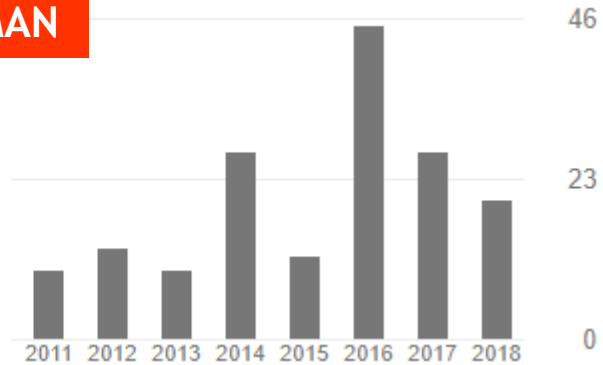
HANANI YAZID

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GOOGLE SCHOLAR PROFILE

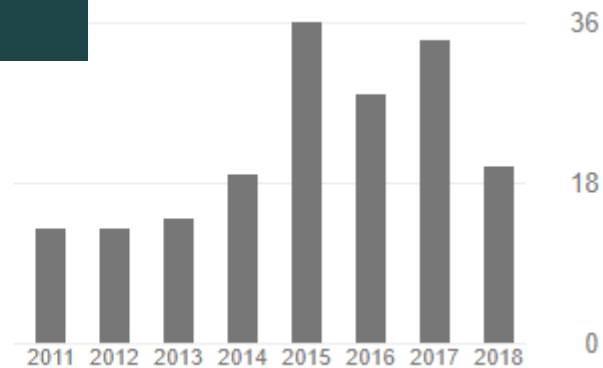
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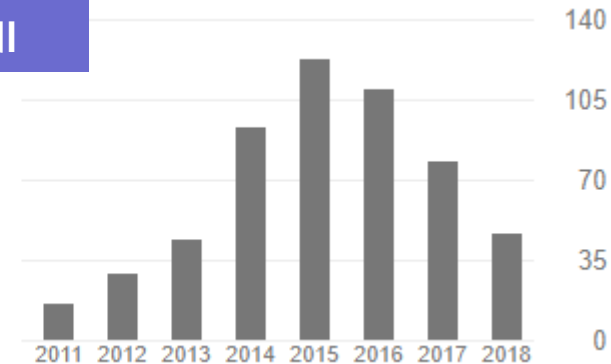
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DR ABDUL MUTALIB MD JANI

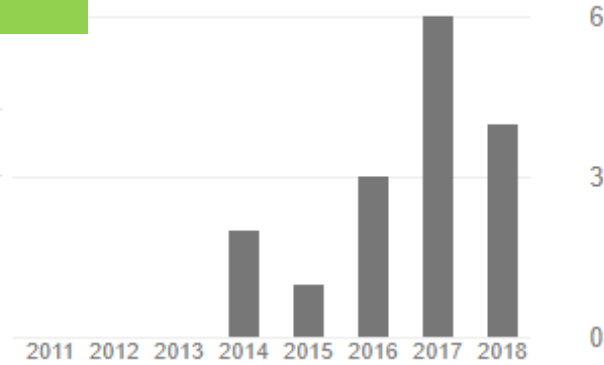
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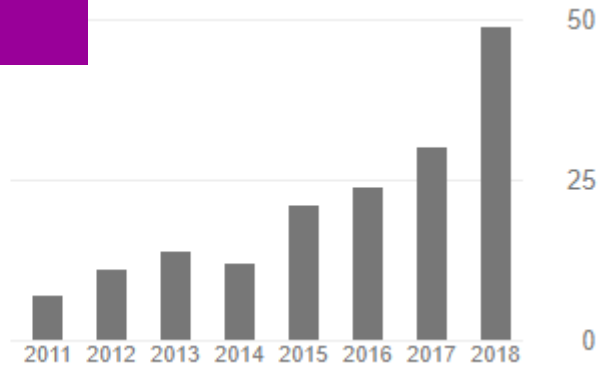
DR ANG LEE SIN

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HANANI YAZID

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h-index	9	8
i10-index	7	6



FUTURE INTEREST AND COLLABORATION

- Improving the Current Cells (Materials & Technology)
- Interconnects Development
- Cell Stacks Development
- Exchange Scientist Program
- Workshop - Experience Sharing
- Testing Facilities

