National Battery Research Institute

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ICB REV

Report Book

www.n-bri.org

22-24 June 2021

INTRODUCTION

International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021 is one of the most important event to discuss the current issue of the sustainable clean energy in the world.

The conference has been organized by the National Battery Research Institute (NBRI) in collaboration with the Queen Mary University of London (QMUL), Material Research Society Indonesia (MRS-INA), and International Union of Material Research Societies (IUMRS). This conference is a part of the implementation of the Global Challenges Research Fund (GCRF) 2020-2021.

The ICB-REV 2021 has brought together the experts on battery technology from all over the world, the researchers from university and institution, practitioners from industry, and other stakeholders that related to this issue.

This conference has succeeded to deliver the output and outcome that give a beneficial for all parties. Therefore, the target of sustainable development goals especially on clean energy and climate change could be achieved.

Thank you so much for all of your contributions.

Founder of National Battery Research Institute (NBRI) and President of Material Research Society-Indonesia (MRS-INA)	Co-Founder of National Battery Research Institute (NBRI)
Prof. Dr. rer. nat. Evvy Kartini	**Prof. Alan J Drew**
Chair	Vice Chair

ICB-REV 2021 Secretariat:

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BACKGROUND

National Battery Research Institute (NBRI) is a platform that brings together scientists, academicians, industry partners, the government and all stakeholders that focus on battery technology for both Electric Vehicles and Renewable Energies. The NBRI was supported by the UK Government's Global Challenge Research Fund (GCRF) 2020-2021. Since it began its activities in January 2020, NBRI has performed various activities such as Focus Group Discussion (FGD), NBRI Lectures, Millenials Talks, and Joint Webinars with diverse institutions, universities, industries, communities, national and international scope. One of the prestige program is International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021.

The conference has gathered all the experts on battery technology from all over the world and they have presented their recent works and have shared their knowledge to all participants. This event has opened international networking in the fields of energy storage and renewable energy. This has been accomplished by the presence of invited world-class speakers and international participants for the scientific program to bring the impact of this battery technology. This event has invited the honorable Nobel prize winner on lithium-ion battery 2019. Furthermore, the industries also have promoted their products.

THEME

The theme for the **International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021** is **"Innovation in advanced battery technology for e-mobility and sustainable clean energy."**

PURPOSE

The International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021 has gathered all the experts and practitioners on battery technology from all over the world and they have presented their recent works and share their knowledge to all attendences. This conference has opened international networking in the fields of energy storage. ICB-REV 2021 has brought together all of researchers, academicians, industries, and government to transfer information on interdisciplinary platform.

FOCUS

The focus of this event consisted of:

1. International conference on battery for renewable energy and electric vehicles.
2. International school of battery technology.

MAIN TOPICS OF SYMPOSIA

1. Advanced battery technology from raw materials to cell fabrication
    - Lithium-ion
    - Beyond lithium-ion
    - Battery material processing and characterization

- Mineral extraction for battery electrode
- Material separation for electrode
- Battery performance testing
- Battery improvement, etc.

2. Energy storage for renewable energy (solar, wind, biomass, etc)
   - Photovoltaic energy storage
   - Grid energy storage
   - Renewable energy storage
   - Wind turbine energy
   - Geothermal energy
   - Nuclear energy, etc.
3. Battery electric vehicles, battery swap, and charging station
   - Fast-charging station
   - Electric vehicles improvement
   - Power station
   - Battery Management System
   - Hybrid charging station
   - Electric vehicles battery design, etc.
4. Other related topics (policy, regulation, standardization, industry, etc)
   - Market study for battery, renewable energy, and electric vehicles
   - Energy storage public policy
   - Battery safety policy
   - Battery manufacturing activity
   - Effect of energy storage related to environment
   - Battery contribution for reducing climate crisis, etc.

TIME AND VENUE

Time: 22-24 June 2021
Venue: Indonesia (Conducting Online)

IMPORTANT DATES

1. Abstract submission deadline: June 01, 2021
2. Abstract acceptance notification: June 07, 2021
3. Early bird registration deadline: June 14, 2021
4. Full paper submission deadline: June 24, 2021
5. Conference date: June 22-24, 2021

JOURNAL AND PROCEEDING PUBLICATIONS

1. Progress in Natural Science: Materials International (Q1, Scopus, Impact Factor (IF) 1.753, 5 year IF 2.113). (https://www.journals.elsevier.com/progress-in-natural-science-materials-international/)
2. IONICS (Q2, Scopus, IF 2.119). (https://link.springer.com/journal/11581)

3. International Proceeding (Q3, Indexed by Scopus):
    - AIP Conference Series (http://aip.scitation.org/)

REGISTRATION FEE

Category	Fee	Remark
International Presenter	Early bird: USD 350 After June 15, 2021: USD 400	*Include: participate all conference programs, oral presentation, international certificate, and international publication.*
International Student Presenter	Early bird: USD 250 After June 15, 2021: USD 300	
International Participant Only	Regular: USD 150 Student: USD 100	*Include: attend all conference program, international certificate*
Indonesian Presenter	Early bird: IDR 2.500.000 After June 15, 2021: IDR 3.000.000	*Include: participate all conference program, oral presentation, international certificate, and international publication.*
Indonesian Student Presenter	Early bird: IDR 2.000.000 After June 15, 2021: IDR 2.500.000	
Indonesian Participant Only	Regular: IDR 1.500.000 Student: IDR 1.000.000	*Include: attend all conference programs, international certificate*

AGENDA OF ICB-REV 2021

Sessions	Time	(Day-1) Tuesday, June 22nd		Time	(Day-2) Wednesday, June 23rd			Time	(Day-3) Thursday, June 24th	
Morning Session (GMT+7)	08.00-08.10	Opening by Master of Ceremony		08.20-08.30	Opening by Master of Ceremony			08.20-08.30	Opening by Master of Ceremony	
	08.10-08.20	Prof. Dr. rer. nat. Evvy Kartini (*Founder of NBRI and President of MRS-INA*)		08.30-09.10	Prof. Jun Liu (*Director of the Innovation centre for Battery 500 Consortium*)			08.30-09.10	Prof. Dr. Ir. Anhar Riza Antariksawan (Head of BATAN, Indonesia)	
	08.20-09.00	Dr. Laksana Tri Handoko (*Chairman of National Research and Innovation Agency, Republic of Indonesia*)		09.10-09.50	Ir. Agus Tjahajana (*President Commissioner of IBC*)			09.10-10.00	Yi Ke, Ph.D. (*Energy Storage Program Manager – New Energy Nexus Global*)	
	09.00-09.10	Prof. B.V.R. Chowdari (*Director of Regional IUMRS*)		09.50-10.30	Prof. Ying Shirley Meng (*Research Award of International Battery Material Association 2019*)			10.00-10.45	Prof. Dr. rer. nat. Evvy Kartini (*Founder of National Battery Research Institute and President of MRS-INA*)	
	09.10-09.50	Prof. Tim White (*President of MRS-Singapore*)		10.30-10.35	Room Transition			10.45-10.50	Room Transition	
	09.50-10.00	Prof. John B. Goodenough (*Nobel Prize Winner in Chemistry 2019*)		10.35-11.05	Parallel Session			10.50-11.20	Parallel Sessions	
	10.00-10.05	Room Transition								
	10.05-10.35	Parallel Sessions			**Battery** Prof. Stefan Adams (*NUS, Singapore*)	**Renewable Energy** Diyanto Imam (*Program Director of New Energy Nexus, ID*)			**Battery** Dr. Alexey Glushenkov (*ANU, Australia*)	**Renewable Energy** M. Firmansyah, S.E. (*CEO at INFIEN ENERGI*)
		Battery Prof. Takashi Kamiyama (*Spallation Neutron Source, China*)	**Renewable Energy** Prof. Dr. M. Zaki Mubarok (*ITB*)							
	10.35-12.00	Oral Session		11.05-12.00	Oral Session			11.20-12.00	Oral Session	
	12.00-13.00	Break Session								
Afternoon Session (GMT+7)	13.00-13.15	Prof. Colin Gareth Bailey (*President and Principal of QMUL*)		13.00-13.40	Prof. Rodrigo Martins (*President of IUMRS and European Academy of Science (EurASc)*)			13.00-14.00	Prof. Laurence Hardwick (*Director of the Stephenson Institute for Renewable Energy, University of Liverpool*)	
	13.15-14.00	Prof. Alan J Drew (*Co-founder of NBRI*)								
	14.00-15.00	Prof.Dr.Eng. Eniya Listiani Dewi, M.Eng (*Deputy for Information, Energy, and Materials Technology of BPPT*)		13.40-14.20	Dr. Ir. Taufik Bawazier, M.Si. (*General Director of ILMATE The Ministry of Industry, Indonesia*)			14.00-14.50	Dr. Ana Jorge Sobrido, Ph.D. (*UKRI Future Leaders Fellow, QMUL*)	
	15.00-15.05	Room Transition		14.20-14.25	Room Transition			14.50-14.55	Room Transition	
	15.05-15.35	Parallel Sessions		14.25-14.55	Parallel Sessions			14.55-15.25	Parallel Sessions	
		Battery Prof. Dr. Vanessa Peterson (*ANSTO, Australia*)	**Electric Vehicles** Prof. Dr. Santi Maensiri (*President of MRS-Thailand*)		**Battery** Dr. Haznan Abimanyu (*LIPI*)	**Battery (2)**	**Electric Vehicles** Prof. M. Nizam (*Coordinator of National Research Priority*)		**Battery**	**Electric Vehicles** Dr. M. Mustafa Sarinanto (*BPPT, Indonesia*)
	15.35-16.30	Oral Session		14.55-16.30	Oral Session			15.25-16.30	Oral Session	
								16.30-17.00	**Closing Remarks**	

Day-1 (Tuesday, June 22nd 2021)

Session	Time	Code	Estimation	Speaker	Topic	Affiliation
Morning Session (GMT+7)	08.00-08.10	**Opening by Master of Ceremony**				
	08.10-08.20	OP	10’	Prof. Dr. rer. nat. Evvy Kartini		Founder of NBRI and President of MRS-INA
	08.20-09.00	PL	40’	Dr. Laksana Tri Handoko	Innovation in advanced battery technology for e-mobility and sustainable clean energy	Chairman of National Research and Innovation Agency, Republic of Indonesia
	09.00-09.10	OP	10’	Prof. B.V.R. Chowdari		Director of Regional IUMRS
	09.10-09.50	PL	40’	Prof. Tim White	Battery Research at NTU for a Sustainable Future	President of MRS-Singapore
	09.50-10.00	PL	10”	Prof. John B. Goodenough	The Role of Lithium Battery Technology	Nobel Prize Winner in Chemistry 2019
	10.00-10.05	**Room Transition**				
	10.05-12.00	**Battery**				
		KN	30’	Prof. Takashi Kamiyama	Neutron Probe for Battery Development	Spallation Neutron Source, China
		INV	25’	Lukman Noerochim, Alvalo Toto Wibowo, Widyastuti Widyastuti and Achmad Subhan	Direct Double Coating of Carbon and Nitrogen on Fluorine-Doped Li4Ti5O12 as An Anode for Lithium-Ion Battery	ITS, ITS, ITS, LIPI
		INV	25’	Sudaryanto, Evvy Kartini, Muhammad Fakhrudin, Moch Setyadji, and Kurnia Trinopiawan	Utilization of Rare-Earth Elements for Performance Improvement of Lithium Battery Materials	BATAN
		OR	15’	Asih Kurniasari, Ariono Verdianto, Iyan Subiyanto and Chairul Hudaya	The Effects of Nitrogen Gas Flow Rate on Physical Characteristic of Corncob Activated Carbon as Active Electrode Material of Lithium-Ion Capacitors	B2TKE BPPT, KIST School-Korea University of Science and Technology, Korea Institute of Energy Research, Universitas Indonesia-Universitas Teknologi Sumbawa
		OR	15’	Rizka Ayu Puspita, Evvy Kartini, Muhammad Fakhrudin, Widi Astuti and Slamet Sumardi	The Study of (Ni, Mn, Co)SO4 as Raw Materials for NMC Precursor by X-Ray Fluorescence (XRF)	NBRI, BATAN-NBRI, BATAN, LIPI, LIPI
		Renewable Energy				
		KN	30’	Prof. Dr. M. Zaki Mubarok	Separation of Nickel and Cobalt by Selective Oxidative Precipitation Using Ozone Gas for Preparation of Cathode Materials Used in NMC Lithium Ion Battery	Institute of Technology Bandung
		INV	25’	Zainal Arifin and Linda Fitri	Implementation of Battery Energy Storage System at Cirata PV Solar Floating for Reducing the Electricity Cost Production on JAMALI Grid	PT PLN (Persero), Insitut Teknologi PLN
		OR	15’	Cipta Panghegar Supriadi, Adit Triwiguno, Muhammad Firmansyah and Evvy Kartini	Techno Economic Analysis of Public Solar Street Light with Integrated Monitoring System For Parking Area	INFINITI ENERGI INDONESIA, INFINITI ENERGI INDONESIA, INFINITI ENERGI INDONESIA
		OR	15’	Ganesh Eega, Sai Ram Pavuluri, Eswar Sai Kiran Reddy Gangireddy, Pavan Kumar R and Mohit Kumar Goel	Automatic solar tracking for Energy Management	Lovely Professional University, India

	12.00-13.00	**Break Session**				
Afternoon Session (GMT+7)	13.00-13.15	OP	15’	Prof. Colin Gareth Bailey		President and Principal of QMUL
	13.15-14.00	PL	50’	Prof. Alan J Drew	The Future of Dual Ion Battery	Co-founder of NBRI
	14.00-15.00	PL	60’	Prof.Dr.Eng. Eniya Listiani Dewi, M.Eng	Energy Storage for Green Economy	Deputy for Information, Energy, and Materials Technology, Agency for the Assessment and Application of Technology (BPPT)
	15.00-15.05	**Room Transition**				
	15.05-16.30	**Battery**				
		KN	30’	Prof. Dr. Vanessa Peterson	Advanced Neutron Characterization of Rechargebale Battery Systems	Australian Nuclear Science and Technology Organisation (ANSTO), Australia
		INV	25’	Teguh Yulius Surya Panca Putra, Takashi Saito, Yustinus Purwamargapratala, Sudaryanto Sudaryanto, Evvy Kartini, Bambang Sugeng, Rina Kamila, Muhammad Fakhrudin, Nur Ika Puji Ayu, Masato Hagihala and Takashi Kamiyama	Synthesis and Structural Study of Li4Ti5O12/SnO2 Composite as Anode Materials for Lithium Ion Batteries	BATAN, KEK, BATAN, BATAN, BATAN, BATAN, BATAN, BATAN, KEK, KEK, KEK
		OR	15’	Muhammad Nizam Fanani, Evvy Kartini, Muhammad Fakhrudin, Rizka Ayu Puspita, Agus Sudjatno	The Effect of Stirring Time on Synthesis of NMC-622 Cathode Active Material with Oxalate Coprecipitation	STTN-BATAN, BATAN-NBRI, BATAN, NBRI, BATAN
		OR	15’	Fajrul Mawaddah, Evvy Kartini, Rizka Ayu Puspita, M Fakhrudin and Agus Sudjatno	The Effect of Milling Time and Rotation Speed on Li-NMC Cathode Performance	STTN-BATAN, BATAN-NBRI, NBRI, BATAN, BATAN
		Electric Vehicles				
		KN	30’	Prof. Dr. Santi Maensiri	Development of Advance Materials for Energy Storage Application	President of MRS-Thailand
		INV	25’	Susanto Sigit Rahardi and Evvy Kartini	Battery Swap Indonesia National Standard Concept	B4T, NBRI
		OR	15’	Muhammad Alfawza Biljannah and Evvy Kartini	Design of Battery Pack for Electric Bike	Diponegoro University, NBRI-BATAN
		OR	15’	Abi Nur Hakim, Ubaidillah and Muhammad Nizam	Multipe Coil Design on Eddy Current Brake Type Half Circle Slotted	UNS
		OR	15’	Shinta Widyaningrum, Evvy Kartini and Martin Taylor	Reducing Carbon Monoxide (CO) Air Pollution with Electric Vehicles to Overcome Climate Change	NBRI, NBRI, Swinburne University of Technology

OP= Opening Remarks
PL= Plenary Session
KN= Keynote Session
INV= Invited Speaker
OR= Oral Contributor

Day-2 (Wednesday, June 23rd 2021)

Session	Time	Code	Estimation	Speaker	Topic	Affiliation
Morning Session (GMT+7)	08.20-08.30	Opening by Master of Ceremony				
	08.30-09.10	PL	40’	Prof. Jun Liu	Future Energy Systems and Energy Storage	Director of the Innovation centre for Battery 500 Consortium
	09.10-09.50	PL	40’	Ir. Agus Tjahajana	SOE’s EV Battery Integrated Industry Development Plan	President Commissioner of IBC
	09.50-10.30	PL	40’	Prof. Ying Shirley Meng	From Atom to System-Building Better Batteries for Energy Transition	Research Award of International Battery Material Association 2019
	10.30-10.35	Room Transition				
	10.35-12.00	Battery				
		KN	30’	Prof. Stefan Adams	Opportunities and Challenges in All-Solid-State Lithium Batteries	NUS, Singapore
		INV	25’	Evvy Kartini, Agus Sudjatno, Muhammad Fakhrudin, Mohammad Zaki Mubarok, Rizka Ayu Puspita	The Study of Mixed Hydroxide Precipitate (MHP) from Local Mineral Resources in Indonesia	BATAN-NBRI, BATAN, BATAN, ITB, NBRI
		OR	15’	Sutarsis	Effect of the Oxygen Functional Group on the High-Voltage Performance and Self-Discharge of Carbon Supercapacitors Electrodes	ITS
		OR	15’	Rialdy Fahmi and Evvy Kartini	Synthesis and Characterization of NMC111 Cathode by Co-precipitation Method	Padjajaran University, National Battery Research Institute
		OR	15’	Brillian Aqif Naufal, U Ubaidillah, Aditya Prabowo and Muhammad Nizam	Mechanical Load Test Battery Developed By Universitas Sebelas Maret (UNS) with Experimental Approaches	UNS
		Renewable Energy				
		KN	30’	Diyanto Imam	The Prospect of Renewable Energy Start-up to become Game Changer for Sustainable Clean Energy	Program Director of New Energy Nexus, ID
		INV	25’	Sri Sarjana and Efendhi Prih Raharjo	Renewable Power Plant Development Model	Poliktenik Transportasi Darat Indonesia-STTD
		OR	15’	Mochamad Subhan Alkyana and Evvy Kartini	Strengthening Energy Diplomacy to achieve “Affordable, Reliable, Sustainable, and Modern Energy for all” (SDGs 7) by 2030	NBRI
		OR	15’	Aris Budi Sulistyo and I Gusti Bagus Wijaya Kusuma	Increasing performance of solar cell by using red wavelength	Poliktenik Transportasi Darat Bali and University of Udayana
	12.00-13.00	Break Session				
Afternoon Session (GMT+7)	13.00-13.40	PL	40’	Prof. Rodrigo Martins	Functional Materials for a Better Prosperity for All	President of IUMRS and European Academy of Science (EurASc)
	13.40-14.20	PL	40’	Dr. Ir. Taufik Bawazier, M.Si	Indonesian Policy in Electric Vehicles Ecosystem	General Director of ILMATE The Ministry of Industry, Indonesia

	14.20-14.25	**Room Transition**				
	14.25-16.30	Battery (1)				
		KN	30’	Dr. Haznan Abimanyu	Nanostructure Materials in Li-ion Battery for Electric Vehicles	Director of Research Centre for Electrical Power and Mechatronics Indonesia Institute of Science
		INV	25’	Muhammad Fakhrudin, Evvy Kartini and Heri Jodi	CeO2-Coated NMC 811 as the Cathode Material for Li-Ion Batteries	BATAN
		INV	25’	Sih Wuri Andayani, Alfiz Muhamad Qizwini, Muhammad Aryansyah, Jesslyn, Najmuddin Yahya	Cathode Active Material of Lithium Battery from Nickel Matte: Indonesian Case Study	Centre for Material and Technical Product, Centre for Material and Technical Product, Centre for Material and Technical Product, Chemistry Department ITB, Centre for Material and Technical Product
		OR	15’	Yustinus Purwamargapratala, Evvy Kartini, Agus Sujatno, Teguh Yulius Surya Panca Putra and Heri Jodi	Activated Carbon from Rice Husk With Various Activators For Lithium Ion Battery Cathode Material Additive	BATAN, NBRI, BATAN, BATAN, BATAN
		OR	15’	Moh. Wahyu Syafi'ul Mubarok, Muhammad Fakhrudin and Evvy Kartini	Synthesis and Structural Study of CeO2-Doped NMC 811 as the Cathode Material	NBRI, BATAN, BATAN-NBRI
		OR	15’	Slamet Sumardi, Widi Astuti, Fika Rofiek Mufakhir, Muhammad Fakhrudin and Evvy Kartini	Effect of Alkali Types during Iron Precipitation on the Manganese Sulfate Crystallization from Indonesian Manganese Ore	LIPI, LIPI, LIPI, BATAN, BATAN
		Battery (2)				
		INV	25’	Anne Zulfia Syahrial, Jarot Raharjo, Benediktus Madika	Synthesis of Lithium Lanthanum Titanate using Local Lanthanum Oxide as a Lanthanum Source for Lithium-ion Battery Anode Material Application	UI, BPPT, UI
		INV	25’	Widi Astuti, Slamet Sumardi, Fika Rofiek Mufakhir, Muhammad Fakhrudin and Evvy Kartini	Synthesis of Manganese Carbonate from Indonesian Manganese Ore as NMC Cathode Precursor	LIPI, LIPI, LIPI, BATAN, BATAN
		OR	15’	Kurnia Setiawan Widana, Ilsa Rosianna, Dhatu Kamajati, Frederikus Dian Indrastomo, Yarianto Sugeng Budi Susilo and Agus Sumaryanto	Characterization of Unconventional Rare Earth Elements Resources from Bangka Monazite and Tin Slag	BATAN
		OR	15’	Fanny Fahriatunnisa Muliawanti and Evvy Kartini	Graphene derived from rice husk	Padjajaran University, National Battery Research Institute
		OR	15’	Kurnia Trinopiawan, Evvy Kartini, Yarianto Sugeng Budi Susilo, Kurnia Setiawan Widana, Sudaryanto Sudaryanto and Mochamad Setyadji	Development of a process for production of Rare Earth Hydroxide from Monazite	BATAN
		Electric Vehicles				
		KN	30’	Prof. M. Nizam	The Opportunity for Developing E-Mobility	Coordinator of National Research Priority

					Ecosystem in Indonesia	on Energy Storage
		INV	25’	Adit Triwiguno, Muhammad Firmansyah, and Evvy Kartini	Market Study on the Mineral Resources for NMC Lithium-ion Battery Cathode in Indonesia	Infiniti Energi Indonesia, NBRI
		OR	15’	Henny Sudibyo, Vita Susanti and Merry Devi	Overview of the Level of Domestic Components in the Opportunities of the Indonesian Electric Vehicle Industry	LIPI
		OR	15’	Prasetyo Aji, Dionysius Aldion Renata, Rully Kusumajaya, Rachmawan Atmaji Perdana and Made Gunawan	Test Performance of Charging Station of Management System	BPPT
		OR	15’	I Made Gatot Karohika and I Nyoman Gde Antara	Optimization of Airless Tire Design for Electric Vehicles	Universitas Udayana
		OR	15’	Egi Jonathan, Shafira, Evvy Kartini	Market of Electric Vehicles in Indonesia	NBRI

PL= Plenary Session
KN= Keynote Session
INV= Invited Speaker
OR= Oral Contributor

Day-3 (Thursday, June 24th 2021)

Session	Time	Code	Estimation	Speaker	Topic	Affiliation
Morning Session (GMT+7)	08.20-08.30	Opening by Master of Ceremony				
	08.30-09.10	PL	40’	Prof. Anhar Riza Antariksawan	Harmonizing Nuclear Energy with Renewable Energy in National Energy Policy of Indonesia	Head of BATAN
	09.10-10.00	PL	50’	Yi Ke, Ph.D.	The Opportunities for Startups and Large Corporate Collaborations and our Experience on the EV and Battery Challenge and LG Chem Battery Challenge.	Energy Storage Program Manager – New Energy Nexus Global
	10.00-10.45	PL	45’	Prof. Dr. rer. nat. Evvy Kartini	The development of NMC 811 cathode for lithium ion battery based on the local mineral resources	Founder of National Battery Research Institute and President of MRS-INA
	10.45-10.50	Room Transition				
	10.50-12.00	Battery				
		KN	30’	Dr. Alexey Glushenkov	Potassium-ion and Dual-ion Battery Chemistries	ANU, Australia
		INV	25’	Agus Sugiyono and Ira Fitriana	The Role of Battery Energy Storage System in Supporting the Net Zero Emission Target in Indonesia’s Electricity System	BPPT
		OR	15’	Achmad Subhan and Abdulloh Rifai	Li-ion Diffusion Behavior and Electrochemical Performance of Li4Ti5O12 and Na2Li2Ti6O14	LIPI
		Renewable Energy				
		KN	30’	M. Firmansyah, S.E.	The Effect of Renewable Energy Policy Implementation on Energy Usage	CEO at INFIEN ENERGI
		OR	15’	Mohammad Ridho Nugraha and Evvy Kartini	Analysis of Stand-Alone Street Light Installation in Tekno Area by Monitoring System Powered with Polycrystalline PV Panel and LiFePO4 Prismatic Battery	NBRI
		OR	15’	I Gusti Bagus Wijaya Kusuma and Aris Budi Sulistyo	Increasing energy storage capacity by using liquid hydrogen	University of Udayana and Politeknik Transportasi Darat Bali
	12.00-13.00	Break Session				
Afternoon Session (GMT+7)	13.00-14.00	PL	60’	Prof. Laurence Hardwick	In situ vibrational spectroscopy of electrode interfaces	Director of the Stephenson Institute for Renewable Energy, University of Liverpool
	14.00-14.50	PL	50’	Dr. Ana Jorge Sobrido, Ph.D.	Sustainable Freestanding Electrodes for Energy Storage	UKRI Future Leaders Fellow, QMUL
	14.50-14.55	Room Transition				
	14.55-16.30	Battery				
		INV	25’	Evangelin Hutamaningtyas, Hande Alptekin, Jorge Pavel Victoria, Ana Belen Jorge Sobrido, Magdalena Titirici, Alan J Drew	Tin-Hard Carbon Composite Anode Materials for Sodium-ion Batteries	QMUL, Imperial College London, QMUL, QMUL, Imperial College London, QMUL
		OR	15’	Safira Sabilla Rosyad and	Effect of pulse current on morphology and	ITB

				Mohammad Zaki Mubarok	crystal structure of electrolytic manganese dioxide	
		OR	15’	Heri Jodi, Anne Zulfia, Muhammad Fakhrudin, Evi Yulianti and Evvy Kartini	The Conductivity Enhancement of 1.5Li2O-P2O5 Solid Electrolytes by Montmorillonite Addition	BATAN, UI, BATAN, BATAN, BATAN
		OR	15’	Deswita Deswita, Yulia Indriani and Indra Gunawan	Synthesis and Characterizations of LiMn2O4 Sheet over Al Foil as Cathode Material for Li Ion Baterry	BATAN, UNS, BATAN
		Electric Vehicles				
		KN	30’	Dr. M. Mustafa Sarinanto	BPPT’s Role for Coming Age of Battery Electric Vehicle in Indonesia	BPPT, Indonesia
		INV	25’	Putu Gardian, Ardhi Wardhana and Rio Pramudita	The Impact of Growing Electric Vehicle Battery Production to Nickel Supply Chain in Indonesia Using System Dynamics Approach	Low Carbon Development Initiatives Indonesia, Institut Teknologi Bandung, PT Akuo Energy Indonesia
		OR	15’	Setiawan Nur Ikhsan and Evvy Kartini	Power Consumption Analysis of A Brushless DC Motor 48V 500W Electric Bike on An Assembled Lithium-ion Battery Pack	Diponegoro University, NBRI-BATAN
		OR	15’	Dzaky Pratama, U Ubaidillah, Aditya Prabowo and M Nizam	An Axial and Lateral Battery Crushing using Non-Linear Finite Element (NLFE) approach.	UNS
	16.30-17.00	**Closing Remarks**				

PL= Plenary Session
KN= Keynote Session
INV= Invited Speaker
OR= Oral Contributor

SPEAKERS

Opening Remarks

Prof. Dr. rer. nat. Evvy Kartini
(Founder of NBRI and President of MRS-INA)
"A Glimpse of National Battery Research Institute"

Dr. Laksana Tri Handoko
(Chairman of National Research and Innovation Agency, Republic of Indonesia)
"Innovation in advanced battery technology for e-mobility and sustainable clean energy"

Prof. Colin Gareth Bailey
(*President and Principal of Queen Mary University of London)*
"From Vision to Reality"

Prof. B.V.R. Chowdari
(Director of Regional IUMRS)
"Strengthening Research Collaboration"

Plenary Speakers

Prof. John B. Goodenough

(The Nobel Prize in Chemistry 2019)

"The Role of Lithium Battery Technology"

Prof. Tim White

(President of Material Research Societies (MRS) Singapore)

"Battery Research at (Nanyang Technological University) NTU for a Sustainable Future"

Prof. Ying Shirley Meng

(Research Award of International Battery Material Association 2019)

"From Atom to System-Building Better Batteries for Energy Transition"

Dr. Laksana Tri Handoko
(Chairman of National Research and Innovation Agency, Republic of Indonesia)

"Innovation in advanced battery technology for e-mobility and sustainable clean energy"

Prof. Jun Liu

(Director of the Innovation Centre for Battery 500 Consortium)

"Future Energy Systems and Energy Storage"

Prof. Dr. rer. nat. Evvy Kartini
(Founder of NBRI and President of MRS-INA)

"The development of NMC 811 cathode for lithium ion battery based on the local mineral resources"

Ir. Agus Tjahajana Wirakusumah

(President Commissioner of Indonesian Battery Corporation (IBC))

"SOE's EV Battery Integrated Industry Development Plan"

Prof. Alan J Drew

(Queen Mary University of London, UK)

"The Future of Dual Ion Battery"

Dr. Ir. Taufik Bawazier, M.Si

(General Director of The Ministry of Industry Indonesia)

"Indonesian Policy in Electric Vehicles Ecosystem"

Prof. Dr. Eng. Eniya Listiani Dewi, M.Eng

(Deputy for Information, Energy, and Materials Technology, Agency for the Assessment and Application of Technology (BPPT))

"Energy Storage for Green Economy"

Prof. Rodrigo Martins

(President of IUMRS and European Academy of Science (EurASc))

"Functional Materials for a Better Prosperity for All"

Prof. Dr. Ir. Anhar Riza Antariksawan

(Head of BATAN, Indonesia)

"Harmonizing Nuclear Energy with Renewable Energy in National Energy Policy of Indonesia"

Prof. Laurence Hardwick

(Director of the Stephenson Institute for Renewable Energy, University of Liverpool)

"In situ vibrational spectroscopy of electrode interfaces"

Yi Ke, Ph.D.

(Energy Storage Program Manager-New Energy Nexus Global)

"The Opportunities for Startups and Large Corporate Collaborations and our Experience on the EV and Battery Challenge and LG Chem Battery Challenge"

Dr. Ana Jorge Sobrido, Ph.D.

(UKRI Future Leaders Fellow, QMUL)

"Sustainable Freestanding Electrodes for Energy Storage"

Keynote Speakers

Diyanto Imam

(Program Director of New Energy Nexus Indonesia)

"The Prospect of Renewable Energy Start-up to become Game Changer for Sustainable Clean Energy"

Prof. Dr. Vanessa Peterson

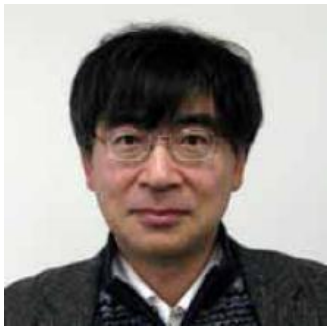
(ANSTO, Australia)

"Advanced Neutron Characterization of Rechargebale Battery Systems"

Prof. Dr. Stefan Adams

(NUS, Singapore)

"Opportunities and Challenges in All-Solid-State Lithium Batteries"



Prof. Dr. Takashi Kamiyama

(Spallation Neutron Source, China)

"Neutron Probe for Battery Development"

Prof. Dr. Ir. Muhammad Nizam, ST., MT., Ph.D.

(Coordinator of the National Research Priority on Energy Storage)

"The Opportunity for Developing E-Mobility Ecosystem in Indonesia"

Prof. Dr. Santi Maensiri

(President of MRS-Thailand)

"The Development of Advance Materials for Energy Storage Application"

Prof. Dr. M. Zaki Mubarok

(Institute of Technology Bandung, Indonesia)

"Separation of Nickel and Cobalt by Selective Oxidative Precipitation Using Ozone Gas for Preparation of Cathode Materials Used in NMC Lithium Ion Battery"

Dr. Alexey Glushenkov

(Australia National University (ANU), Australia)

"Potassium-ion and Dual-ion Battery Chemistries"

Dr. Haznan Abimanyu, Ph.D.

(Director of Research Centre for Electrical Power and Mechatronics at Indonesian Institute of Sciences (LIPI))

"Nanostructure Materials in Li-ion Battery for Electric Vehicles"

Dr. Mohammad Mustafa Sarinanto, IPU

(BPPT, Indonesia)

"BPPT's Role for Coming Age of Battery Electric Vehicle in Indonesia"

M. Firmansyah, SE.

(CEO at PT. Infiniti Energi Indonesia)

"The Effect of Renewable Energy Policy Implementation on Energy Usage"

ORGANIZATION

Steering Committee

Prof. Alan J Drew	*Co-Founder of National Battery Research Institute*
Prof. Dr. rer. nat. Evvy Kartini	*Founder of National Battery Research Institute*
Prof. Dr. Rodrigo Martins	*President of IUMRS*
Prof. M. Nizam, Ph.D.	*Coordinator of the National Research Priority Mandatory*

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Prof. Dr. Jow-Lay Huang	*MRS-Taiwan*
Prof. Dr. Woo-Gwang Jung	*MRS-Korea*
Prof. Dr. Soo Wohn Lee	*(IUMRS Officer), Korea*
Prof. Dr. Santi Maensiri	*MRS-Thailand*
Prof. Dr. Osvaldo Novais de Oliveira Jr	*(IUMRS Officer), Brazil*

Prof. Alan J Drew	*Queen Mary University of London, UK and Co-founder of NBRI*
Dr. Christian Nielsen	*Queen Mary University of London, UK*
Dr. Ana Jorge Sobrido	*Queen Mary University of London, UK*
Prof. Dr. Ir. Anne Zulfia, M.Sc.	*University of Indonesia, Indonesia*
Dr. Mohamad Mustafa Sarinanto, IPU	*Agency for the Assessment and Application of Technology (BPPT) Indonesia*
Ir. Chairul Hudaya, Ph.D.	*Sumbawa University of Technology Indonesia*
Dr. Alexey Glushenkov	*Australia National University (ANU) Australia*
Prof. Poi See Lee	*Nanyang Technological University, Singapore*
Arief S. Budiman, Ph.D.	*BINUS University, Indonesia*

Organizing Committee

Chair	Prof. Dr. rer. nat. Evvy Kartini
Vice Chair	Prof. Alan J Drew
Secretary	Shinta Widyaningrum, S.Sos.
Treasury	Adit Tri Wiguno, SE
	Noer'aida
Coordinator of Conference	Moh. Wahyu Syafi'ul Mubarok, S.Si
Chairman	Dr. Chairul Hudaya, Ph.D.
	Prof. Dr. Ir. Anne Zulfia Syahrial
	Dr. Arief Budiman, Ph.D.
	Prof. Dr. Ir. Muhammad Nizam, ST.,MT.,PhD
	Prof. Dr. Rudy Harjanto, M.Sn.
Coordinator of International Battery School	Cipta Panghegar Supriadi, MT.
	Muhammad Ridho Nugraha, ST.
Coordinator for Journal Publication	Muhammad Fakhrudin, ST.
	Rizka Ayu Puspita, S.Tr.
International Relation	M. Firmansyah, S.E.
Press Conference	Muhammad Subhan Alkyana, S.IP.
Easychair	Dr. Nofrijon Sofyan
Creative Team	Shafira Ramadhani
	Euaggelion Jonathan Ambarita, S.Kom.
Webmaster	Raditya Baskoro
Volunteer	Setiawan Nur Ikhsan
	Rialdy Fahmi
	Fanny Fahriatunnisa Mulyawati
	Muhammad Alfawza Biljannah
	Muhammad Amrullah
	Muhammad Nizam Fanani

GENERAL REPORT

Figure 1. The Committee of ICB-REV 2021

The International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021 has been successfully conducted on June 22nd-24th, 2021. The ICB-REV 2021 has been managed fully online due to the covid-19 pandemic situation. This international event has been prepared less than two months with a solid team. Figure 1 represents the people behind ICB-REV 2021 which separates in Steering Committee and Organizing Committee with 18 persons in total. The name as follows:

- **Steering Committee (left to right)**
    1. Muhammad Firmansyah, SE.
    2. Prof. Dr. rer. nat. Evvy Kartini
    3. Adit Tri Wiguno, SE.
- **Organizing Committee (left to right)**

    -Women's line
    1. Rizka Ayu Puspita, S.Tr
    2. Shinta Widyaningrum, S.Sos.
    3. Fanny Fahriatunnisa Mulyawati
    4. Shafira Ramadhani

    -Men's line
    5. Rialdy Fahmi
    6. Muhammad Alfawza Biljannah
    7. Euaggelion Jonathan Ambarita
    8. Moh. Wahyu Syafi'ul Mubarok, S.Si. **(PIC of ICB-REV 2021)**
    9. Muhammad Nizam Fanani
    10. Mochammad Subhan Alkyana, S.IP
    11. Setiawan Nur Ikhsan

12. Muhammad Ridho Nugraha, ST.
13. Muhammad Fakhrudin, ST.
14. Muhammad Amrullah
15. Cipta Panghegar Supriadi, MT.

There are several sponsors have involved in the ICB-REV 2021. Global Challenges Research Fund (GCRF) and PT. Telkom Indonesia as platinum sponsors. Queen Mary University of London (QMUL), PT. Infiniti Energi Indonesia (Infien), International Union of Materials Research Societies (IUMRS), Material Research Society of Indonesia (MRS-INA), ESQ Leadership Center, PT Komatsu Indonesia, and KGC Saintifik as supported sponsor. All sponsors logo is shown in figure 2.

Figure 2. The sponsors of ICB-REV 2021

The total of attendances in three days has reached 203 participants (more than 50 attendances in every session) from 10 countries. Most of them are from Indonesia (180 participants) followed by United Kingdom (5 participants), India (4 participants), Singapore (3 participants), and Australia (2 participants). Also a person from Thailand, Japan, Portugal, and Iraq. Figure 3 shows the data of participants by its demography. According to institution background, the participants have come from Research Center, Industry, Press and Media, Government, and University. Figure 4 shows the each number specifically. And by occupation, ICB-REV 2021 has covered Indonesian participant, Indonesian student, International participant, and International student. Figure 5 shows the specific number of every occupation.

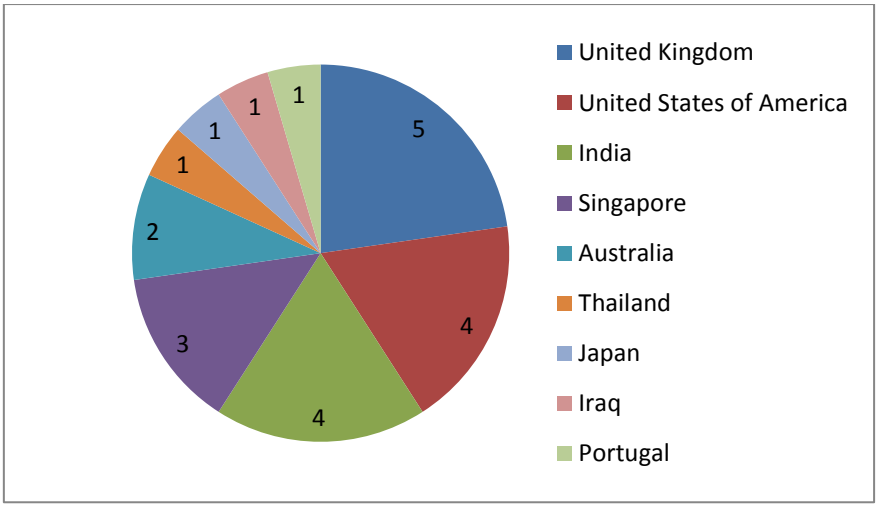


Figure 3. The demographic data of ICB-REV 2021 participants (exclude Indonesia)

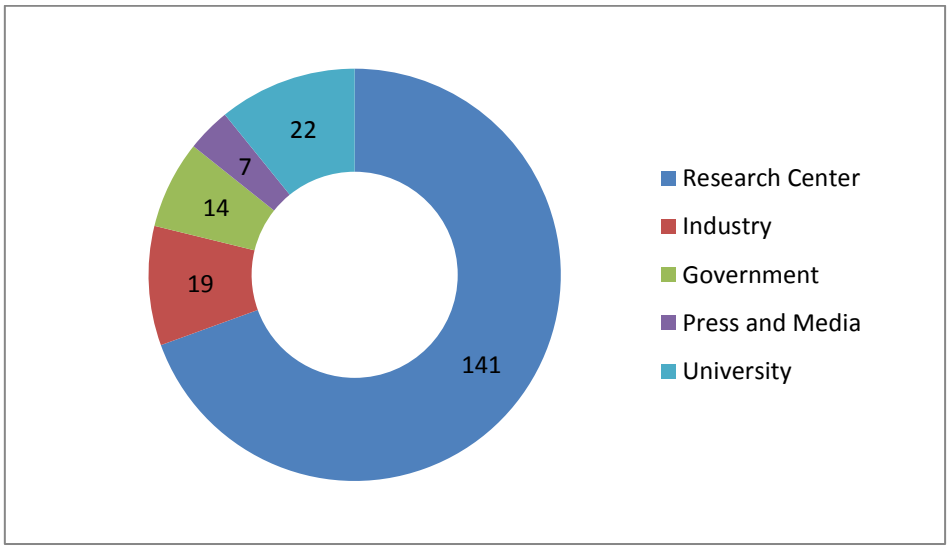


Figure 4. Institution background of ICB-REV 2021 participants

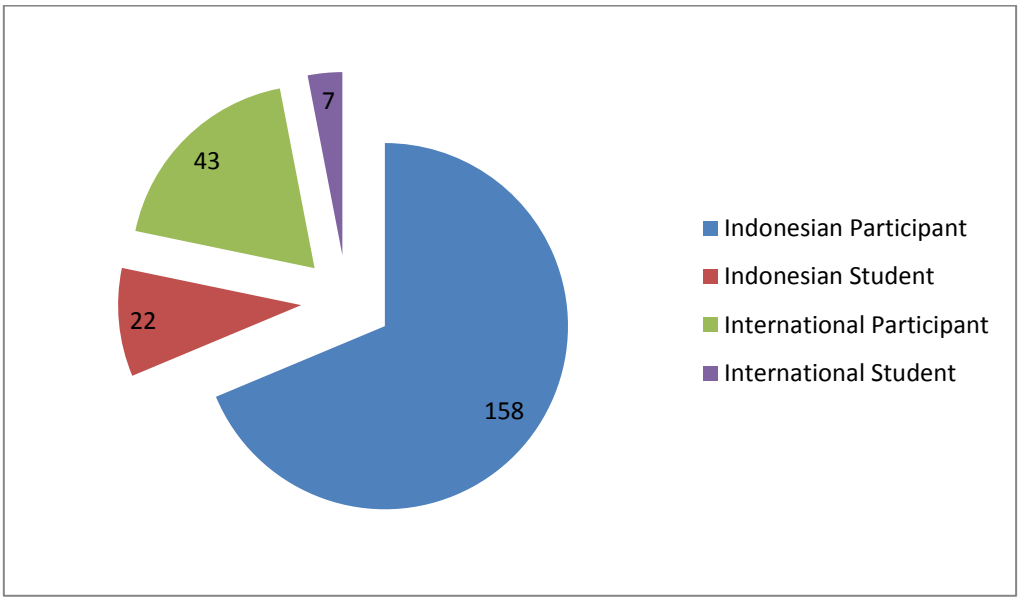
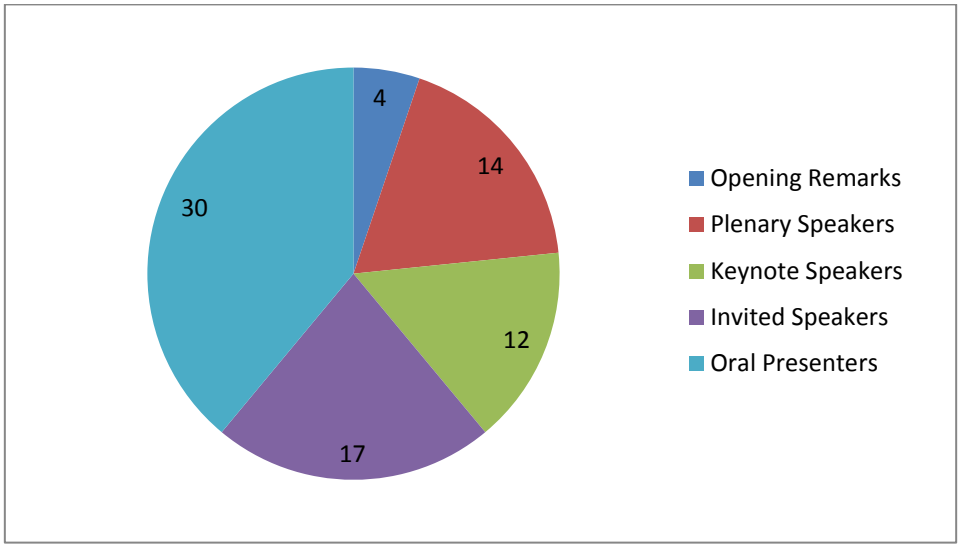
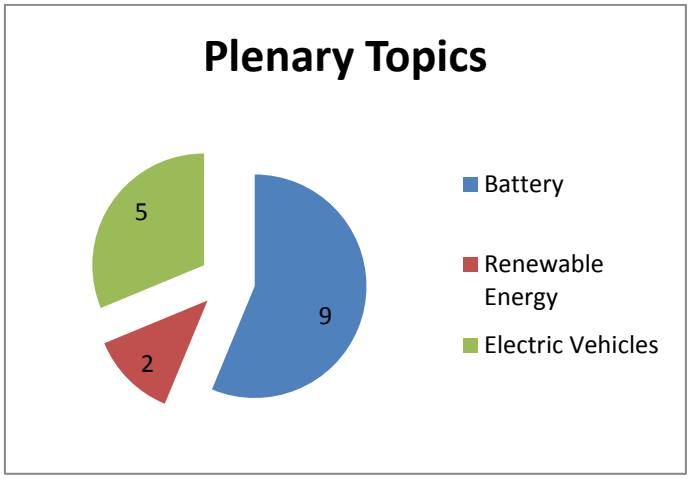


Figure 5. The occupation of ICB-REV 2021 participants

Furthermore, the ICB-REV 2021 has presented 77 distinguished speakers which consist four opening remarks, 14 plenary speakers, 12 keynote speakers, 17 invited speakers, and 30 oral presenters. The number of papers submitted reached to 49 manuscripts in three main topics; Battery, Renewable Energy, and Electric Vehicles. Figure 6 explains the speakers classification and topics, also figure 7 shows the paper topics of ICB-REV 2021.





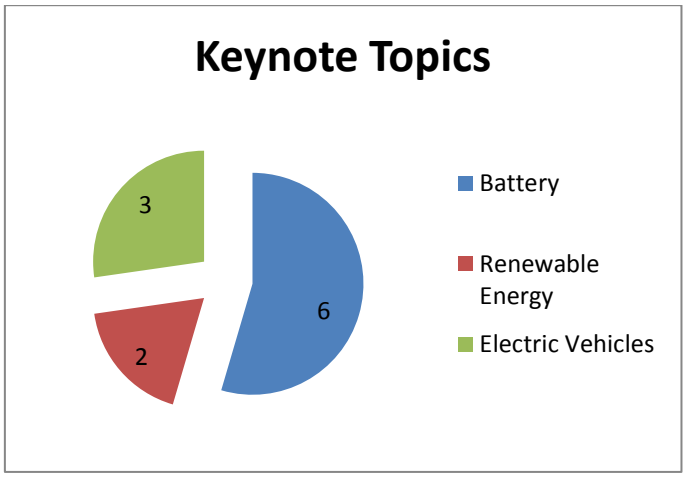


Figure 6. Speakers classification and topics of ICB-REV 2021

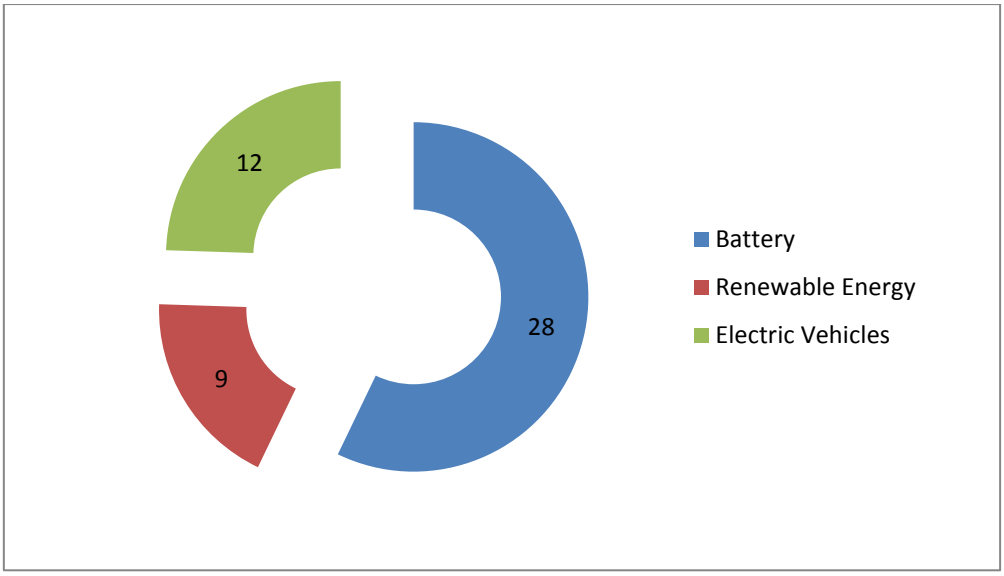


Figure 7. Paper topics of ICB-REV 2021

Furthermore, the ICB-REV 2021 has been covered by several mainstream media. Such as Antara News and Pinusi. Here are the screenshot of those news.

https://antaranews.com/berita/2225842/nbri-kejar-penguasaan-teknologi-baterai-untuk-kendaraan-listrik

https://antaranews.com/berita/2226334/brin-tingkatkan-riset-baterai-dan-kendaran-listrik-untuk-kemandirian

NBRI GELAR KONFERENSI INTERNASIONAL, APA YANG DIBAHAS?

NABILA NADAZERA · TEKNOLOGI · 22 JUNI 2021 · 0 COMMENTS · 1 MIN READ · ♡ 1

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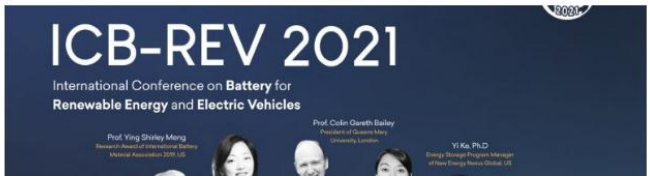
https://pinusi.com/teknologi/nbri-gelar-konferensi-internasional-apa-yang-dibahas/

KENDARAAN LISTRIK DI MASA DEPAN, BAGAIMANA INDONESIA MEMPERSIAPKANNYA?

NABILA NADAZERA · TEKNOLOGI · 22 JUNI 2021 · 0 COMMENTS · 2 MIN READ · ♡ 1



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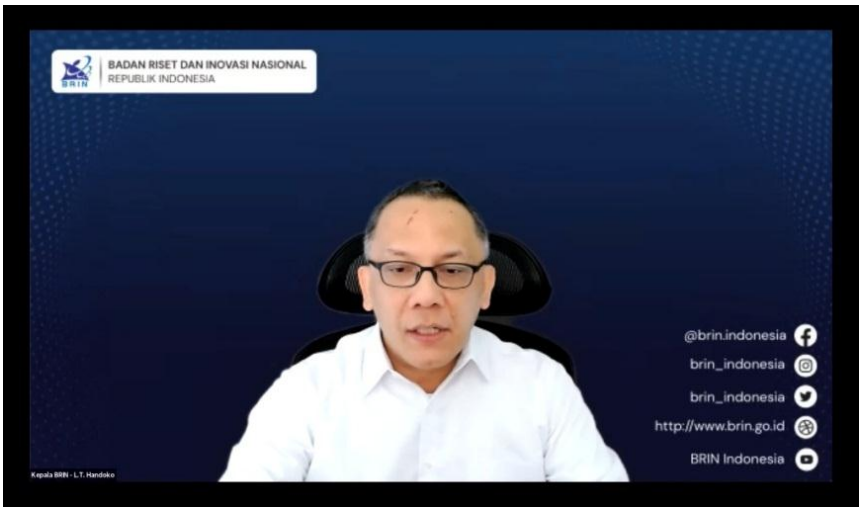
https://pinusi.com/teknologi/kendaraan-listrik-di-masa-depan-bagaimana-indonesia-mempersiapkannya/

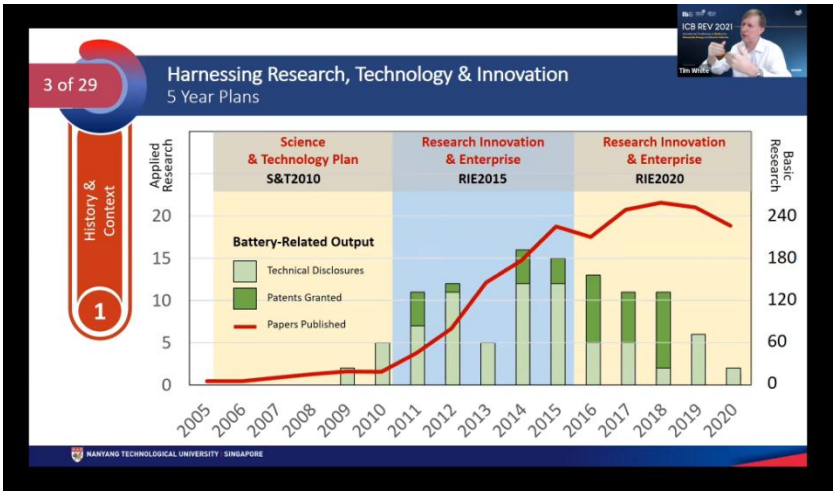
SUBSTANTIAL REPORT

The ICB-REV 2021 is opened by Prof. Dr. rer. nat Evvy Kartini as a founder of National Battery Research Institute (NBRI) and president of Material Research Society Indonesia (MRS-INA). She reported the ICB-REV 2021 event and introduced the NBRI in a glimpse during the opening remarks.

Afterward, the Chairman of National Research and Innovation Agency (BRIN) Republic of Indonesia, Dr. Laksana Tri Handoko, took the virtual stage to present his opening remarks and plenary speech. Dr. Handoko talked about innovation in advanced battery technology for e-mobility and sustainable clean energy, including the new direction of BRIN.



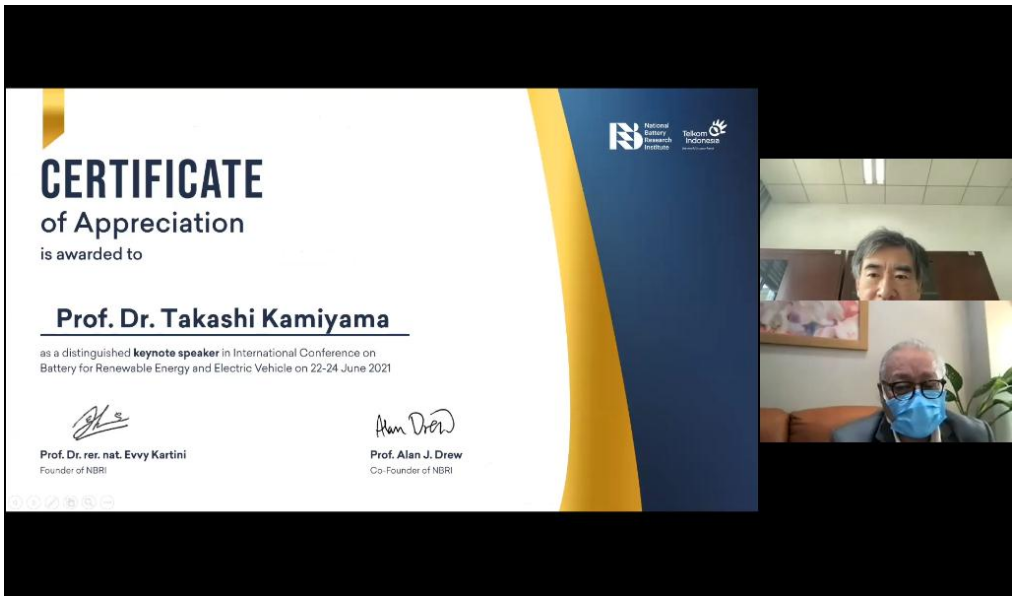
Before the next plenary session, the Director Regional of International Union of Material Research Societies (IUMRS), Prof. B.V.R. Chowdari from Singapore, spread his message on strong research collaboration between Indonesia and Singapore through his opening remark. Then, Prof. Tim J. White delivered his insightful plenary speech. He is Associate Vice President (Infrastructure & Programs) of Nanyang Technological University (NTU) Singapore and also President of Material Research Society (MRS) Singapore. Prof. White talked about Battery Research at NTU for a Sustainable Future.



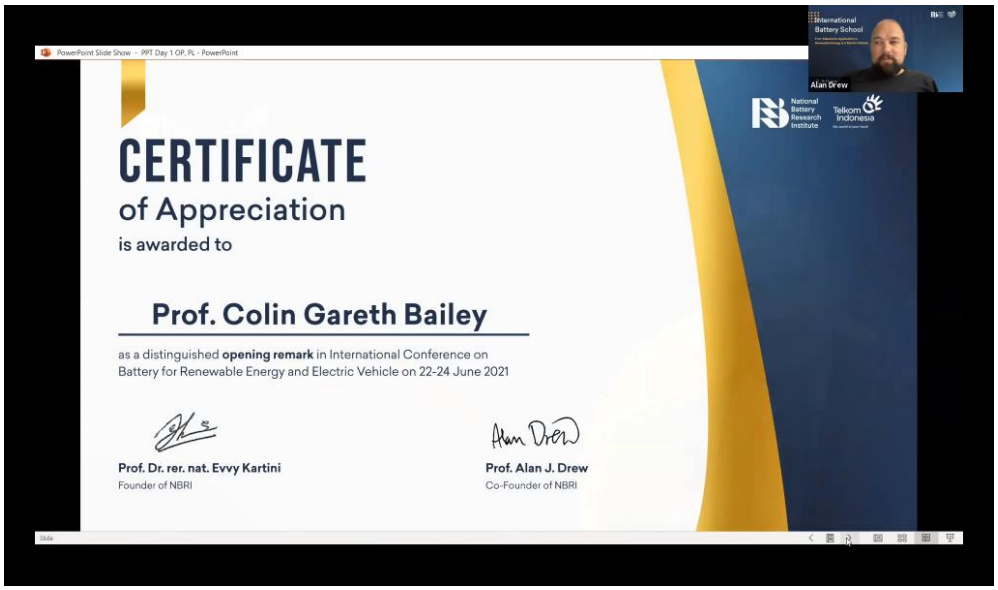
After Prof. White words, the ICB-REV 2021 had a special stage for the Nobel Prize Winner 2019 in Chemistry. The Committee strove for less than two months to contact Prof. John Bannister Goodenough, Prof. Stanley Whittingham, and Prof. Akira Yoshino. Unfortunately, its confirmed by their secretary that they unable to involve in the ICB-REV 2021 directly due to the limit time and health condition. So, the committee presented the stage of honor for Prof. John B. Goodenough with his inspiring video. Prof. Dr. rer. nat Evvy Kartini, as a person who has met Prof. Goodenough in 2015, led the session with full of powerful message for a better earth living using the technology. The morning session in first day of ICB-REV 2021 was moderated by distinguished chairman, Prof. Arief Budiman from BINUS University.

The following agenda was the keynote session. There were two rooms in morning session, battery and renewable energy. Prof. Takashi Kamiyama from Spallation Neutron Source, China presented his keynote speech on Neutron Probe fo Battery Development. The distinguished chairman for battery room was Prof. Rudy Harjanto. In other side, Prof. Dr. Muhammad Zaki Mubarok from Institute of Technology Bandung became the keynote speaker for Renewable Energy room. He talked about Separation of Nickel and Cobalt by

Selective Oxidative Precipitation Using Ozone Gas for Preparation of Cathode Materials Used in NMC Lithium Ion Battery.



Afternoon session is opened by distinguished chairman, Prof. Dr. rer. nat. Evvy Kartini. Actually, the first session was opening remark from Prof. Colin Gareth Bailey as President and Principal of Queen Mary University of London (QMUL). However, due to the circumstance, the stage was took over by Prof. Alan J Drew as a representative of Prof. Colin. Afterward, Prof. Alan continued with his plenary speech about the structure-function relationship in Na ion batteries.



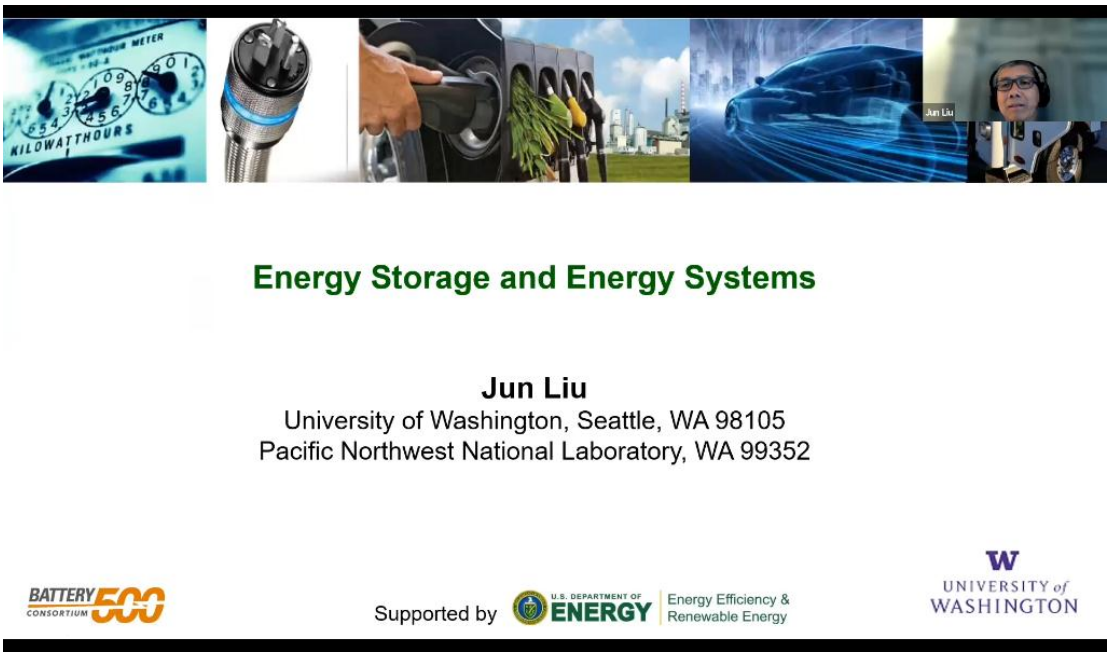
Subsequently, Prof. Dr. Eng. Eniya Listiani Dewi, M.Eng. as Deputy for Information, Energy and Materials Technology of the Agency for Assessment and Application of Technology (BPPT) delivered her insightful plenary speech. The Habibie Award 2010 winner in engineering science conveyed about energy storage for green economy. It was insightful

speech where battery, electric vehicles, and hydrogen sources could involved in green economy line, simultaneously.

After informative plenary discussion, the agenda continued to keynote session. There were two breakout rooms, battery and electric vehicles. Prof. Dr. Vanessa Peterson from Australian Nuclear Science and Technology Organisation (ANSTO), Australia presented at the battery stage. She explained about Advanced Neutron Characterization of Rechargebale Battery Systems. In Electric Vehicles room, there was Prof. Dr. Santi Maensiri. The president of Material Research Society (MRS) Thailand expressed the Development of Advance Materials for Energy Storage Application.

The second day of ICB-REV 2021. The distinguished chairman was Dr. Chairul Hudaya as chancellor of Universitas Teknologi Sumbawa. Prof. Jun Liu from Pacific Northwest National Laboratory, University of Washington took a stage for first plenary session in the day two. He is a Director of the Innovation Center for Battery 500 Consortium

and talked about the Future Energy Systems and Energy Storage. How battery technology becomes the game changer for clean energy systems.

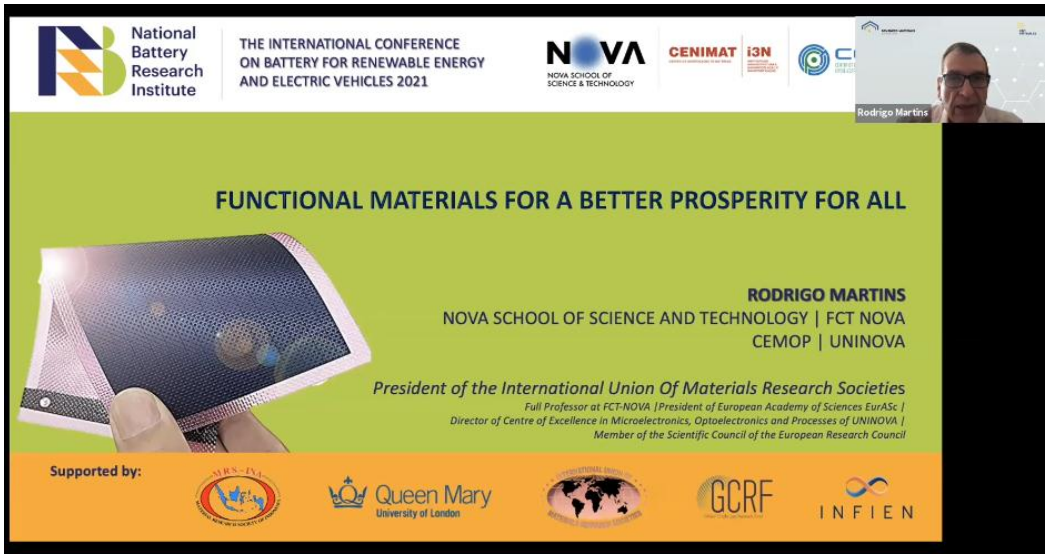


Afterward, the session belonged to President Commissioner of Indonesian Battery Corporation (IBC), Ir. Agus Tjahajana Wirakusumah. The title of his presentation was State-Owned Enterprises (SOE's) Electric Vehicles Battery Integrated Industry Development Plan. It is important perspective to overcome battery integrated industry in Indonesia and its policy. By build the strong collaboration ecosystem of State-Owned Enterprise (BUMN) in between.

The third plenary speaker in the morning session was Prof. Prof. Ying Shirley Meng from University of California San Diego. She holds the Zable Endowed Chair Professor in Energy Technologies and Research Award of International Battery Material Association 2019. Prof. Shirley talked about Building Better Batteries-How to Enable the Tera-scale

Energy Transition. It is science-hack to accelerate innovation from prototype to giga factory, seems like the Tesla Way. After insightful discussion, the agenda was followed by keynote session. There were two rooms, Battery and Renewable Energy. Keynote speaker of battery room was Prof. Stefan Adams from National University of Singapore (NUS) with Opportunities and Challenges in All-Solid-State Lithium Batteries topic. On the other side, the keynote speaker for Renewable Energy was Diyanto Imam as Program Director of New Energy Nexus, ID. He talked about The Prospect of Renewable Energy Start-up to become Game Changer for Sustainable Clean Energy.

In afternoon session, the ICB-REV 2021 had Prof. Dr. Ir. Anne Zulfia Syahrial, M.Sc. as distinguished chairman. She moderated the afternoon plenary agenda. First plenary speaker was Prof. Rodrigo Martins as President of International Union of Material Research Societies (IUMRS) and European Academy of Science (EurASc). He talked about Functional Materials for a Better Prosperity for All. It is not only about the sustainability issue, but also the green emerging technology for securing the future earth living.



Afterward, the next session was Dr. Ir. Taufik Bawazier, M.Si. as General Director of ILMATE The Ministry of Industry, Indonesia. He presented about Indonesian Policy in Electric Vehicles Ecosystem. It is critical aspect to accelerate Indonesian innovation in

building strong Electric Vehicles ecosystem with policy analysis in between. The second day of ICB-REV 2021 was closed by the keynote session and oral presentation splitted in three rooms. Battery 1, Battery 2, and Electric Vehicles.

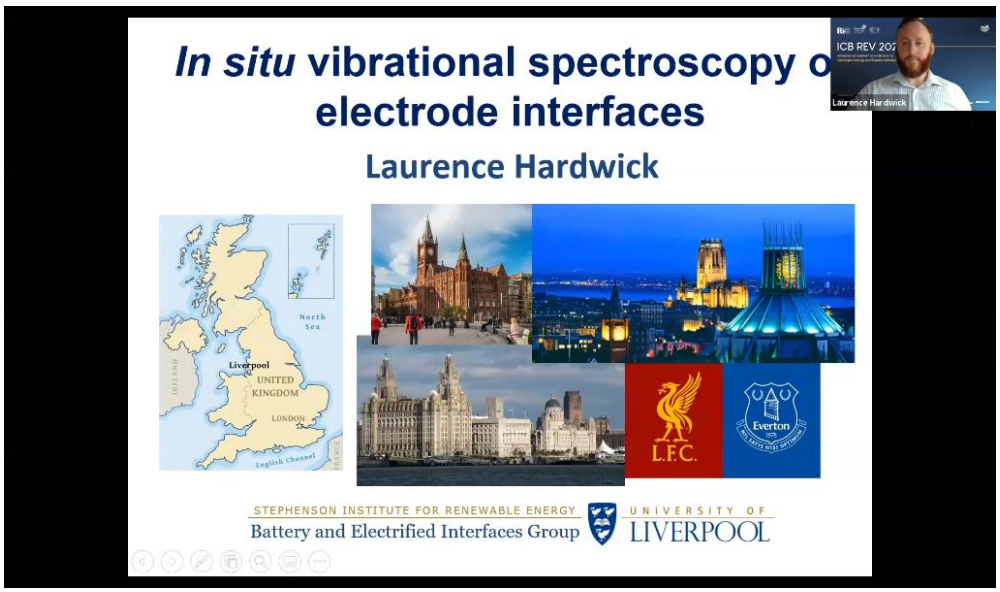
There were two outstanding speakers. Dr. Haznan Abimanyu as Director of Research Centre for Electrical Power and Mechatronics Indonesia Institute of Science (LIPI). He talked about Nanostructure Materials in Li-ion Battery for Electric Vehicles in battery 1 room. From the Electric Vehicles room, there was Prof. Dr. Ir. Muhammad Nizam, ST., MT., Ph.D. as Coordinator of National Research Priority on Energy Storage. He concerned about The Opportunity for Developing E-Mobility Ecosystem in Indonesia.

The last day of International Conference on Battery for Renewable Energy and Electric Vehicles (ICB-REV) 2021 had the distinguished chairman, Prof. Dr. Ir. Muhammad Nizam, ST., MT., Ph.D. Professor Nizam moderated many great plenary speakers. Started with Prof. Dr. Ir. Anhar Riza Antariksawan as Head of the National Nuclear Energy Agency, Republic of Indonesia. He talked about The Role of Nuclear Technology on Energy Storage Development. Prof. Anhar drew a fresh understanding about the nuclear as a pillar to cover the quality of battery technology development.

Subsequently, the second plenary speaker for morning session was Yi Ke, Ph.D as Energy Storage Program Manager – New Energy Nexus Global. The former of White House advisor conveyed about The Opportunities for Startups and Large Corporate Collaborations and our Experience on the EV and Battery Challenge and LG Chem Battery Challenge. It is promising way to boost million of green start-up for solving the environment problem.

The last plenary speaker for morning session was Prof. Dr. rer. nat. Evvy Kartini. Chief Scientist at National Nuclear Energy Agency (BATAN) Indonesia, Founder of National Battery Research Institute, President of Materials Research Society Indonesia, and Coordinator WBS3-National Research Priority Mandatory. Prof. Evvy explained about The current research state of NMC-battery Research Based Local Mineral Resources in Indonesia. Afterward, there were keynote session consisted in two rooms; Battery and Renewable Energy. Dr. Alexey Glushenkov from Australia National University (ANU) talked about Potassium-ion and Dual-ion Battery Chemistries in battery. Besides, Muhammad Firmansyah, SE. CEO of Infiniti Energi Indonesia presented about The Effect of Renewable Energy Policy Implementation on Energy Usage.

In afternoon session, the ICB-REV 2021 still brought two great plenary speakers from United Kingdom. The last session was moderated by Prof. Alan J Drew as distinguished chairman. The first session was Prof. Laurence Hardwick as Director of the Stephenson Institute for Renewable Energy, University of Liverpool. Prof. Laurence talked about In situ vibrational spectroscopy of electrode interfaces.



The second session was Dr. Ana Jorge Sobrido, Ph.D from Queen Mary University of London. She also United Kingdom Research and Innovation (UKRI) Future Leaders Fellow that presented Sustainable Freestanding Electrodes for Energy Storage and Engineering Sustainable Materials for Energy Application.

Then, the agenda is followed by keynote session which consisted in two rooms; battery and electric vehicles. Dr. Muhammad Mustafa Sarinanto, IPU from BPPT talked as keynote speaker under the title BPPT's Role for Coming Age of Battery Electric Vehicle in Indonesia. Finally, the ICB-REV 2021 officially closed by Prof. Alan J Drew with his memorable closing remarks.

National Battery Research Institute

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