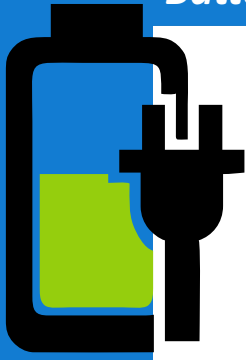


Battery Energy Storage Systems: Past, Present & Future



+ BATTERY- TECHNOLOGIES CONFERENCE

6 NOVEMBER 2020

WEBINAR



Topics to be discussed include (But not limited to)

- Battery storage developments
- Battery storage in automotive industry
- Outlook of battery storage market
- Hybridisation of battery technologies systems
- Research and developments
- Lead-acid battery performance improvements
- Lithium-ion battery life cycle
- Cost reduction and energy efficiency of battery storage

Objectives of the conference

- To deliberate on battery energy storage developments
- To investigate alternative ways of cost reduction and improvement of energy efficiency within the energy storage industry
- To discuss the need for research and developments on battery storage
- To investigate current battery management systems
- To discuss hybridisation of battery technologies systems
- To discuss the application of battery energy storage in the various industries

Speakers Include

Maxwell Giammona

Lead scientist: Heavy-metal free battery project
IBM Research
United States of America

Prof. Dr. Xianfeng Li

Head: Energy Storage Division
Dalian Institute of Chemical Physics
China

Paul Vermeulen

Chief Engineer: Renewables, City Power
Member: South African Energy Storage Association (SAESA)

Nishad Mendis

Senior Engineer
DNV GL- Australia
Australia

Gabriele Buccini

GM-Business Development Energy Storage -
Africa & Middle East
Wärtsilä - Italy

Hiten Parmar

Director
uYilo e-Mobility Programme

Brendan Hawksley
University of Western Cape

Louis Naidoo

Senior Sales Manager
GE Renewable Energy

Tim Harris

CEO
Redflow- Australia

Gerhard Fourie

Chief Director: Green Industries
Department of Trade, Industry and Competition



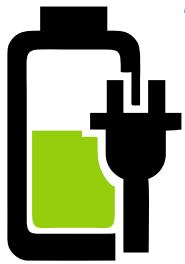
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Conference Background

Vukani Communications is back again with the 6th edition of the Battery Technologies Conference, and this time around, the gathering is virtual. Electrical Energy is an essential commodity without having any easy and direct storage facilities by different packaging unlike other commodities. Battery Energy Storage Systems are widely used for a variety of applications. There is a huge need of batteries in the market since a major part of the economy across the globe cannot move without battery storage. Battery storage technologies have been evolving starting from nickel-iron to the stable long sustaining technology of lead-acid. Lead-acid battery storage has been quite stable for many decades and it needs performance improvement to suit the needs of the time mainly in synergy with the advancement of Industry 5.0. Lithium-Ion batteries have captured a good fraction of the market even though it has two major issues to deal with in terms of high cost and complications in recycling. Aluminium-Ion is a good alternative for Lithium-Ion batteries with slightly lower performance but hugely saving the cost and thus it provides a good trade-off between performance and cost.

Hence the need for continuous attention from research and innovation perspectives for better serving the storage needs within the transport sector and renewable energy sector amongst others. All stakeholders on the battery energy storage sector remains hungry for latest developments on battery management systems with different technologies in addition with hybridisation of technologies for better performance with lower costs. The main focus remains in cost reduction, energy efficiency enhancement as well as life cycles.

Besides there is a persisting need for ensuring green and clean environment with a target in reducing greenhouse gas (GHG) emissions in the atmosphere. Automotive industry has also been going through evolutionary transitions from IC Engines operated vehicles to electric vehicles through several stages of a mix of hybrid vehicles. It automatically demands suitable the battery storage systems with quick charging facilities but not at the cost of too much of loss of life cycles. The marriage between automotive industry and battery storage industry is too deep to be severed and thus there is a pressing need for synchronous evolutions of both of these industries. For sustainable future, both of these industries are to remain dynamically adaptive to changes and transitions with time where the industrial revolutions are ever progressing in leaps and bounds. It compels quite a bit of research discussions and exploratory innovations from experts across the globe.

Thus, Vukani Communications are keen in partnering with this developments for improvised industry solutions with a competitive edge. This Webinar will provide highly sought after discussions around battery storage systems in order to adapt to current and future needs of the market while maximising benefits going forward.

Who should attend

- Account managers
- Analytical chemist

- Battery technicians
- Business development managers
- Business process engineers
- Business process engineers
- CEO
- Chemical engineers
- COO
- Design engineers
- Directors
- Electrical engineers
- Energy consultants
- Energy storage experts
- Forensic scientists
- Managing directors
- Manufacturing directors
- Mining engineers
- Operational manager/directors
- Operations directors
- Product specialist
- Production managers
- Programme managers
- R&D engineers
- Researchers
- Safety facilitators
- Sales and marketing directors
- Software engineers
- Solutions engineers
- Students
- System engineers
- Technical sales representatives

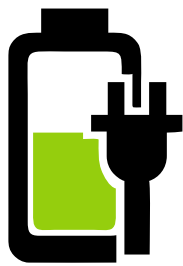
Target Sectors (But not limited to)

- Academia
- Automotive
- Aviation
- Battery manufactures
- Battery recycling
- Battery suppliers and distributors
- Cell manufactures
- Charger suppliers and distributors
- Government departments
- Materials and manufacturing equipment providers
- Medical
- Mining
- Potential investors
- Small businesses
- Telecommunications
- Testing services and systems providers

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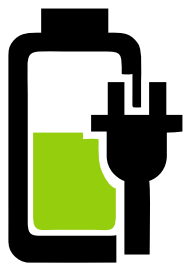
6 NOVEMBER 2020

WEBINAR



Draft Programme

- 08:45 **Opening By Chairperson: Professor SP Daniel Chowdhury**
- 09:00 **Guest Speaker: Gerhard Fourie, Chief Director: Green Industries, Department of Trade, Industry and Competition**
- 09:45 **Role of Flow Battery Energy Storage in the African context**
Chief Executive Officer and Managing Director
Redflow International - Australia
- 10:30 **Australian Battery Performance Standard**
• As developed by DNV GL, CSIRO, Deakin University and Smart Energy Council.
Nishad Mendis, Senior Engineer, DNV GL Australia
- 11:15 **BREAK**
- 11:20 **Flow Battery for Stationary Energy Storage**
Prof. Dr. Xianfeng Li, Head of Energy Storage Division, Dalian Institute of Chemical Physics,
Chinese Academy of Sciences
- 12:05 **Wärtsilä GridSolv for flexible modular energy storage with GEMS energy management resources for multiple applications**
Gabriele Buccini, GM, Business Development Energy Storage - Africa & Middle East, Wärtsilä, Italy
- 12:50 **BREAK**
- 12:55 **Realizing enhanced energy storage value behind the Utility meter**
Paul Vermeulen, Chief Engineer: Renewables, City Power
Chairman of the Policy and Regulation committee of SAESA
- 13:40 **Battery storage in automotive industry**
Hiten Parmar, Director, uYilo e-Mobility Programme
- 14:25 **BREAK**
- 14:30 **The role of Li-ion batteries in the world's energy transition**
Brendan Hawksley, University of Western Cape
- 14:55 **GE energy storage solutions with modern technology applications**
Louis Naidoo, Senior Sales Manager, GE Renewable Energy
- 15:40 **Life cycle enhancement of lead acid batteries by innovative hybridisation of sustainable battery technologies**
Professor SP Daniel Chowdhury
- 16:00 **IBM's New Heavy Metal Free Battery Chemistry with Ultra-high Rate Capability**
Maxwell Giammona, Lead Scientist: Heavy-metal free battery project
IBM Research
- 17:00 **Closing By Chairperson: Professor SP Daniel Chowdhury**



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WEBINAR



REGISTRATION FORM

To register, please complete form below

Participant 1: _____

Designation: _____

Company / Organisation: _____

Email: _____

Phone: _____

Participant 2: _____

Designation: _____

Company / Organisation: _____

Email: _____

Phone: _____

Participant 3: _____

Designation: _____

Company / Organisation: _____

Email: _____

Phone: _____

Postal Address: _____

Person dealing with accounts: _____

Country: _____

Company VAT No: _____

Email Address: _____

Signature: _____

Date : _____

By completing and signing this form, the signatory accepts the terms and conditions as stated on the registration form.

Please indicate your choice of payment method

- Bank Transfer Credit Card
- Cash Deposit

Banking Details

Vukani Communication Consultancy (PTY)
 First National Bank
 Account No. 62584405867, Account Type : Cheque
 Branch Name : Randburg Square
 Branch Code: 261750

CONFERENCE FEE

R1,997 Per Delegate Excl. VAT

Conference fee above INCLUDES the following entitlements: Entrance to session

REGISTER NOW

Terms and Conditions

- The following terms and conditions will apply
- Vukani Communication reserves the right, due to circumstances beyond our control, to change speakers, conference content, date and venue.
 - The signed registration form is a binding contract.
 - No seats will be reserved unless Vukani Communications receives a signed registration form.

SUBSTITUTIONS:

- Delegate Substitution. Substitution is welcome at any time and do not incur any additional charges. Please notify Vukani Communication in writing of any such changes at least 3 days before the date of the event.
- Please note that the speakers and topics were confirmed at the time of publishing however circumstances beyond the control of the organizers may necessitate substitutions, alterations or cancellations of the speakers and/or topics.
- As such, Vukani Communication reserves the right to alter or modify the advertised speakers and/or topics if necessary. Any substitutions or alterations will be updated and sent to you as soon as possible.
- Delegate substitution must be made in writing 7 days before the start of the event.

CANCELLATION:

By signing and returning the registration form, the authorizing signatory on behalf of the stated company is subject to the following terms and conditions.

Charge of 50% of the Registration Fees, plus R700 (+VAT) Administrative charge will be made for cancellations received in writing at least 14 working days prior to the event.

For any cancellations received in less than 7 working days before the date of the event, the full fee will be payable and no refunds or credit notes will be given.

If registered delegate does not cancel and fails to attend the summit, this will be treated as cancellation and no refund or credit will be issued

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