

## Energy Harvesting and Storage: Materials, Devices, and Applications VIII

Sunday - Monday 15 - 16 April 2018

### Conference Sessions At A Glance

[SHOW](#) | [HIDE](#)

- 1: Energy Storage: Beyond Lithium Battery
  - 2: Energy Harvesting: Solar Energy
  - 3: Energy Storage: Materials and Characterization
  - 4: Energy Harvesting: Thermoelectrics, Dielectrics and Others
  - 5: Energy Harvesting and Storage I
  - 6: Energy Harvesting and Storage II
- Defense + Commercial Sensing Plenary Session  
Poster Session

### Important Dates

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Abstract Due:  
9 October 2017

Author Notification:  
11 December 2017  
Notifications will be sent no later than 12/15/17

Manuscript Due Date:  
21 March 2018

### Conference Committee

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#### Conference Chairs

[Nibir K. Dhar](#), U.S. Army Night Vision & Electronic Sensors Directorate (United States)  
[Palani Balaya](#), National Univ. of Singapore (Singapore)  
[Achyut K. Dutta](#), Banpil Photonics, Inc. (United States)

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[Deryn Chu](#), U.S. Army Research Lab. (United States)  
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[Nobuhiko P. Kobayashi](#), Univ. of California, Santa Cruz (United States)

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 Vijay Parameshwaran, U.S. Army Research Lab. (United States)  
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[Patrick J. Taylor](#), U.S. Army Research Lab. (United States)  
 Sudhir B. Trivedi, Brimrose Corp. of America (United States)  
[Chunlei Wang](#), Florida International Univ. (United States)  
[Privalal Wijewarnasuriya](#), U.S. Army Research Lab. (United States)

#### SUNDAY 15 APRIL

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### Session 1: Energy Storage: Beyond Lithium Battery

Sunday 15 April 2018  
 8:20 AM - 10:20 AM  
 Location: Ballroom Level, Sanibel 2

Session Chairs: [Palani Balaya](#), National Univ. of Singapore (Singapore) ; Valerie Pralong, Ctr. National de la Recherche Scientifique (France)


#### Strategy to design new electrode materials for Na ion batteries (Conference Presentation) (Invited Paper)

Paper 10663-1  
 Time: 8:20 AM - 8:50 AM  
 Author(s): Valerie Pralong, Ctr. National de la Recherche Scientifique (France)

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#### Magnesium: a sustainable approach for high energy batteries (Conference Presentation) (Invited Paper)

Paper 10663-2  
 Time: 8:50 AM - 9:20 AM  
 Author(s): Robert Dominko, Ana Robba, Tanja Bancic, Jan Bitenc, Alen Vižintin, Klemen Pirnat, National Institute of Chemistry Slovenia (Slovenia); Anna Randon Vitanova, Honda R&D Europe (Deutschland) GmbH (Germany)


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#### Interfacial issues in rechargeable high energy density lithium batteries (Invited Paper)

**(Canceled)**  
 Paper 10663-3  
 Time: 9:20 AM - 9:50 AM  
 Author(s):

#### Novel sulfide electrode and electrolyte materials for all-solid-state secondary batteries (Invited Paper)

Paper 10663-4  
 Time: 9:50 AM - 10:20 AM  
 Author(s): Atsushi Sakuda, Akitoshi Hayashi, Masahiro Tatsumisago, Osaka Prefecture Univ. (Japan)

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**Coffee Break 10:20 AM - 10:50 AM**

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## Session 2: Energy Harvesting: Solar Energy

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Sunday 15 April 2018  
10:50 AM - 11:50 AM  
Location: Ballroom Level, Sanibel 2

Session Chairs: Vijay Parameshwaran, U.S. Army Research Lab. (United States) ; [Nibir K. Dhar](#), U.S. Army Night Vision & Electronic Sensors Directorate (United States)


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**Materials for energy harvesting: from perovskites and III-V semiconductors to metal alloys (Invited Paper)**

Paper 10663-5

Time: 10:50 AM - 11:20 AM

Author(s): Marina S. Leite, Univ. of Maryland, College Park (United States)


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**Solar water splitting for hydrogen generation using copper metal oxides (Conference Presentation) (Invited Paper)**

Paper 10663-7

Time: 11:20 AM - 11:50 AM

Author(s): Jiangtian Li, Deryn Chu, U.S. Army Research Lab. (United States)

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**Lunch Break 11:50 AM - 1:30 PM**

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## Session 3: Energy Storage: Materials and Characterization

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Sunday 15 April 2018  
1:30 PM - 3:00 PM  
Location: Ballroom Level, Sanibel 2

Session Chairs: Valerie Pralong, Ctr. National de la Recherche Scientifique (France) ; [Palani Balaya](#), National Univ. of Singapore (Singapore)


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**Developing non-flammable sodium-ion battery for stationary applications (Conference Presentation) (Invited Paper)**

Paper 10663-8

Time: 1:30 PM - 2:00 PM

Author(s): Palani Balaya, National Univ. of Singapore (Singapore)


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**In situ investigation of dynamic processes in materials for energy storage (Invited Paper)**

Paper 10663-9

Time: 2:00 PM - 2:30 PM

Author(s): Neha Kondekar, Matthew G. Boebinger, Francisco Javier Quintero Cortes, Matthew McDowell, Georgia Institute of Technology (United States)


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**Applying multiscale imaging and spectroscopic techniques for studying capacity and cycle life degradation in high energy density lithium-ion cells (Conference Presentation) (Invited Paper)**

Paper 10663-10

Time: 2:30 PM - 3:00 PM

Author(s): Jagjit Nanda, Rose E. Ruther, Oak Ridge National Lab. (United States)

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**Coffee Break 3:00 PM - 3:30 PM**

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## Session 4: Energy Harvesting: Thermoelectrics, Dielectrics and Others

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Sunday 15 April 2018  
3:30 PM - 5:30 PM  
Location: Ballroom Level, Sanibel 2

Session Chairs: Vijay Parameshwaran, U.S. Army Research Lab. (United States) ; [Achyut K. Dutta](#), Banpil Photonics, Inc. (United States)


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**Selective laser melting of half-Heusler thermoelectric materials (Invited Paper)**

Paper 10663-12

Time: 3:30 PM - 4:00 PM

Author(s): Haidong Zhang, The George Washington Univ. (United States); Shanyu Wang, University of Washington (United States); Patrick Taylor, Army Research Laboratory (United States); Jihui Yang, University of Washington (United States); Saniya LeBlanc, The George Washington Univ. (United States)


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**III-V materials and acid-stable coatings for efficient and stable solar-to-chemical conversion** (*Invited Paper*)

Paper 10663-13

Time: 4:00 PM - 4:30 PM

Author(s): Georges Siddiqi, Zhenhua Pan, Qianhong Zhu, Shu Hu, Yale Univ. (United States)

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**Dielectric, electrical and magnetic properties of Bi<sub>1/2</sub>Na<sub>1/2</sub>Cu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> ceramic synthesized by semi-wet route**  
(**Canceled**)

Paper 10663-14

Time: 4:30 PM - 4:50 PM


Author(s):

**Piezoelectric microstructured fibers via drawing of multimaterial preforms**

Paper 10663-15

Time: 4:50 PM - 5:10 PM

Author(s): Xin Lu, Hang Qu, Maksim Skorobogatiy, Ecole Polytechnique de Montréal (Canada)


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**Modeling and analysis of energy extraction circuits for triboelectric nanogenerator based vibrational energy harvesting**

Paper 10663-16

Time: 5:10 PM - 5:30 PM

Author(s): Madhav Pathak, Ratnesh Kumar, Iowa State Univ. of Science and Technology (United States)

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**MONDAY 16 APRIL**

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## Session 5: Energy Harvesting and Storage I

Monday 16 April 2018

8:00 AM - 10:00 AM

Location: Ballroom Level, Sanibel 2


Session Chairs: Robert Dominko, National Institute of Chemistry Slovenia (Slovenia) ; Vijay Parameshwaran, U.S. Army Research Lab. (United States)

**Prussian blue analogue materials for energy harvesting and storage (Conference Presentation)** (*Invited Paper*)

Paper 10663-17

Time: 8:00 AM - 8:30 AM

Author(s): Hyun-Wook Lee, Ulsan National Institute of Science and Technology (Korea, Republic of)


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**Electrolyte dictated materials design for beyond lithium ion batteries** (*Invited Paper*)

Paper 10663-18

Time: 8:30 AM - 9:00 AM

Author(s): Xiaowei Chi, University of Houston (United States); Yanliang Liang, Yan Yao, Univ. of Houston (United States)


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**Interfacial engineering of energy conversion and storage materials using atomic layer deposition** (*Invited Paper*)

Paper 10663-19

Time: 9:00 AM - 9:30 AM

Author(s): Neil Dasgupta, Univ. of Michigan (United States)


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**Thermal behavior and runaway of lithium batteries (Conference Presentation)** (*Invited Paper*)

Paper 10663-20

Time: 9:30 AM - 10:00 AM

Author(s): Hans Jürgen Seifert, Karlsruher Institut für Technologie (Germany)

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**Coffee Break 10:00 AM - 10:30 AM**

## Session 6: Energy Harvesting and Storage II

Monday 16 April 2018

10:30 AM - 11:20 AM

Location: Ballroom Level, Sanibel 2

Session Chairs: [Hans Jürgen Seifert](#), Karlsruhe Institut für Technologie (Germany) ; [Palani Balaya](#), National Univ. of Singapore (Singapore)


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**Integration strategy of bio-safe micro-scale lithium-ion battery for implantable healthcare electronics** (*Invited Paper*)

Paper 10663-21

Time: 10:30 AM - 11:00 AM

Author(s): Muhammad M. Hussain, Arwa T. Kutbee, King Abdullah Univ. of Science and Technology (Saudi Arabia)


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**Double smart power management with wind mini-reactor and photovoltaic cell energy harvester for Industry 4.0 IIoT devices**

Paper 10663-24

Time: 11:00 AM - 11:20 AM

Author(s): Borja Pozo, IK4 Tekniker (Spain); Jose Ignacio Garate, Univ. del País Vasco (Spain); Susana Ferreira, IK4 Tekniker (Spain)

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## Defense + Commercial Sensing Plenary Session

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Monday 16 April 2018

5:00 PM - 7:00 PM

Location: Ballroom Level, Osceola Ballroom C

[Plenary Session and Presentation details](#)

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**TUESDAY 17 APRIL**

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### Session PTue: Poster Session

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Tuesday 17 April 2018

6:00 PM - 8:00 PM

Location: Ballroom Level, Osceola Ballroom C

All symposium attendees – You are invited to attend the evening Interactive Poster Session to view the high-quality posters and engage the authors in discussion. Enjoy light refreshments while networking with colleagues in your field. Authors may set up their posters between 10:00 am and 5:00 pm the day of their poster session. Special daytime previewing prior to the session from 10:00 am to 5:00 pm. Attendees are required to wear their conference registration badges to access the Osceola Ballroom to view the posters.

Posters that are not set up by the 5:00 pm cut-off time will be considered no-shows, and their manuscripts may not be published. Poster authors should accompany their posters from 6:00 to 8:00 pm to answer questions from attendees. All posters and other materials must be removed no later than 8:30 pm. Any posters or materials left behind at the close of the poster session will be considered unwanted and will be discarded. SPIE assumes no responsibility for posters left up after the end of each poster session.

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