



Building Integrated PV Conference 2019

Solar Architecture towards Sustainable Cities

25-26 July 2019, Singapore



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BUILDING THE BIPV COMMUNITY

BIPV is a rapidly growing market segment globally, with an installed capacity projected to surpass 11 GWp by 2020.

To overcome the space constraints and competing uses for roof-tops, building-integrated PV (BIPV) or building-applied PV (BAPV) are highly relevant for Singapore. Myths remain though about the aesthetics, energy yield and economic viability.

Please find here the latest programme of the Building Integrated PV Conference 2019: [click here](#)
Registration via [this Eventbrite link](#)

For exhibition space and/or sponsorship opportunities, please contact us at: seris-info@nus.edu.sg

We look forward to welcoming you at the “BIPV Conference 2019: Solar Architecture towards Sustainable Cities” in Singapore.

Your BIPV Conference Chair:

Dr. Veronika Shabunko, Head of the BIPV
Centre of Excellence, SERIS, Singapore

Held in: Supporting organisations:



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Background

In order to achieve **Super Low Energy Buildings (SLEB)**, **Zero Energy Buildings (ZEB)** or even **Positive Energy Buildings (PEB)**, the available rooftop space for solar systems is often not sufficient to cater for a substantial amount of the electricity demand of the building. Therefore, it will be paramount for future SLEB-ZEB-PEB's to also assess the vertical parts of a building for PV deployment. This can be in form of **"Building-integrated PV" (BIPV)**, for example semi-transparent windows, or **"Building-applied PV" (BAPV)**, e.g. parapets. Apart from on-site energy generation, BIPV/BAPV as part of the façade often also has the additional benefit of reducing the solar heat gain into the building, which in turn reduces the cooling load.

The BIPV Conference 2019

The BIPV Conference 2019, organized by SERIS, will be held in Singapore on 25th and 26th of July 2019. This event complements the 5th "Urban Sustainability R&D Congress" co-organized by the Ministry of National Development (MND) and various government agencies. BIPV is a key enabler to achieve urban sustainability.

The **BIPV Conference 2019 brings together** national and international experts, architects, engineers, building professionals, building developers and various stakeholders from private and public sectors. **More than 150 participants are expected.** Attendance is free of charge.

The Aim

In many future building designs and retrofits of existing buildings, BIPV and BAPV will be part of the considerations. Therefore, the **BIPV Conference 2019 aims to** share information on latest technologies, success stories and best practices from around the world, but also to openly discuss challenges and barriers for a larger adoption of a future "solar architecture" in Singapore.

*The "Urban Sustainability R&D Congress" will be held 23-24 July with the theme "Transformative Innovations, Cities of Tomorrow". It is by invitation only. For further enquiries, please visit: www.mnd.gov.sg/urbansustainability

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EDB
singapore




**ENERGY
MARKET
AUTHORITY**
Smart Energy, Sustainable Future

Building and Construction



 **REC**
SOLAR'S MOST TRUSTED

Speakers:



Tjerk Reijenga,
Principal & Chief Architect,
BEAR-iD,
China



Prof. Seeram Ramakrishna,
Chair, Circular Economy
Taskforce, National
University of Singapore



Ang Kian Seng,
Group Director,
Environmental Sustainability,
BCA, Singapore



Dr Zhengrong Shi,
Founder & Chairman,
SunMan Energy,
China



Philip Kwang
Director, Façade Global
Master, Singapore



Peter Roethlisberger,
COO, SOLAXESS White
Technology, Switzerland



Henry Eu,
Country Manager,
REC Solar, Singapore



Karthik Pillai,
Façade Engineer, AGC Asia
Pacific, Singapore



Eric Langenskiöld,
Technical Director
Photovoltaics, Basler &
Hofmann, Switzerland



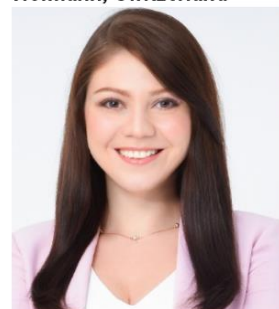
Liong Hang Cek,
Founder & CEO,
PvFoundry,
Singapore



Assoc Prof Patrick Janssen
Department of Architecture,
National University of
Singapore



Dr Khoo Yong Sheng
Head, PV Module Group &
BIPV Innovations, SERIS,
Singapore



Dr Veronika Shabunko,
Head, BIPV Centre of
Excellence, SERIS,
Singapore



Asst Prof Abel Tablada,
Faculty of Architecture,
Technological University of
Havana, Cuba



Brandon Lye,
Senior Engineer,
Building & Research Institute,
HDB, Singapore



Dr Mauro Pravettoni,
Team Leader, PV Module
Characterisation, SERIS,
Singapore

Programme:

THURSDAY

25 July

Building Integrated PV Conference 2019

Time

Venue: Kent Ridge Guild House, National University of Singapore (NUS)

08:30 – 9:00 Registration

09:00 – 10:30 *Conference Opening & Keynote Sessions*

09:00 – 09:05 Opening & Welcome Remarks “BIPV Conference 2019”

09:05 – 09:20 GoH speech

09:20 – 09:40 Keynote #1: “BIPV as a paradigm shift towards Sustainable Cities”, Prof Seeram RAMAKRISHNA, Chair of Circular Economy Taskforce, NUS

09:40 – 10:10 Keynote #2: “30 Years of Building Integrated Solar Architecture”, Tjerk REIJENGA, Principal and Chief Architect, BEAR-iD, China

10:10 – 10:30 Keynote #3: “Super Low Energy (SLE) Roadmap – Critical role of rooftop PV and BIPV”, ANG Kian Seng, Group Director, Environmental Sustainability, BCA, Singapore

10:30 – 11:00 Exhibition Opening & Networking coffee break

11:00 – 13:00 *Session 1: Latest BIPV module technologies*

11:00 – 11:20 “Super-light-weight PV modules for BIPV”, Dr SHI Zhengrong, Founder & Chairman, SunMan Energy, China

11:20 – 11:40 “Façades with Smart Power generation solutions”, Karthik PILLAI, Façade Engineer, AGC Pacific, Japan / Singapore

11:40 – 12:00 “Why and how buildings should not change their aesthetics while becoming energy producers”, Peter ROETHLISBERGER, COO, SOLAXESS White Technology, Switzerland

12:00 – 12:20 “BIPV and Solar Architecture - Colour Is The New Black”, Philip KWANG, Director, Façade Global Master, Singapore

12:20 – 12:40 “PV Quality Beyond Expectations”, Henry EU, Country Manager, REC Solar, Singapore

12:40 – 13:00 “Smart Module for BIPV System Application”, Liang Hang Cek, Founder & CEO, PvFoundry, Singapore

13:00– 14:00 Networking lunch

Programme:

THURSDAY

25 July

Building Integrated PV Conference 2019

Time

Venue: Kent Ridge Guild House, National University of Singapore

14:00 – 16:00

Session 2: Façade-and system integration of BIPV

14:00 – 14:30

“BIPV – The Perfect Combination in Design & Energy”,
Eric LANGENSKIOLD, Technical Director Photovoltaics, Basler & Hofmann,
Switzerland

14:30 – 14:45

“BIPV in HDB estates”,
Brandon LYE, Senior Engineer, Building & Research Institute, HDB, Singapore

14:45 – 15:00

“Pre-fabrication technologies for innovative façade integration of BIPV modules”, Dr KHOO Yong Sheng, Head PV Module Development & BIPV Innovations, SERIS, Singapore

15:00 – 15:15

“3D modelling of facades for assessing BIPV potential”,
A/Prof Patrick JANNSEN, NUS School of Design and Environment, Singapore

15:15 – 15:30

“International standards for BIPV: overview and current status”,
Dr Mauro PRAVETTONI, Team Leader PV Module Characterisation, SERIS, Singapore

15:30 – 15:45

“T2 lab: Harmony of solar and greenery”,
A/Prof Abel TABLADA, Technological University of Havana, Cuba

15:45 – 16:00

TBA.

16:00 – 16:30

Networking coffee break

16:30 – 18:00

Session 3: Implementation of BIPV projects

16:30 – 16:50

“Successful retrofit BIPV projects”,
Tjerk REIJENGA, Principal & Chief Architect, Bear-iD, China

16:50 – 17:10

“Financial assessment of BIPV façades in Singapore”,
Dr Veronika SHABUNKO, Head of BIPV Centre of Excellence, SERIS, Singapore

PANEL DISCUSSION: “What would it take to accelerate BIPV in Singapore?”

17:10 – 17:55

Tjerk REIJENGA, Principal & Chief Architect, BEAR-iD, China
ANG Kian Seng, Group Director, Environmental Sustainability, BCA, Singapore
Philip KWANG, Director, Façade Global Master, Singapore
Eric LANGENSKIOLD, Technical Director PV, Basler & Hofmann, Switzerland

17:55 – 18:00

Summary of BIPV Seminar and Outlook to Friday

18:00 onwards

BIPV Seminar 2019 Reception

Programme:

Friday 26 July	Building Integrated PV Conference 2019 “BIPV SG” Workshop, Lab Tours & Site Visits to BIPV Façade Testbed	
Time	Venue: SERIS @ National University of Singapore (NUS) 7 Engineering Drive 1, Block E3A #04-01 Singapore 117574 http://www.seris.sg/contact/how-to-reach-us-nus.html	
08:45 – 09:00	Registration (Level 4, in front of meeting rooms)	
09:00 – 09:30	Welcome to “BIPV Conference 2019”, Day 2, safety briefing and brief introduction to SERIS.	
GROUP 1 09:30 – 11:30 “BIPV SG” Workshop (SERIS rooms E3A-04-25/26/27)		GROUP 2 09:30 – 11:30 BIPV Test Site Visit & Lab Tour (T2 Lab, PV Monitoring, SERIS Labs)
9:30 – 11:30 “BIPV SG” Workshop Multiple parallel informal discussions on topics set on-demand on previous conference day		9:30 – 11:30 BIPV Test Site Visit & Lab Tour (T2 Lab, PV Monitoring, SERIS Labs)

BIPV Test Site Visit & Lab Tour

26 July 2019 – Friday (9.30-11.30)



SERIS' PV System Monitoring Laboratory:

- Live Irradiance Map
- Online monitoring of local and overseas PV systems
- Online monitoring system for BIPV testbed



SERIS' Calorimeter Laboratory:

- Large Hot Box and Solar Simulator
- Measurement of the thermal properties of building façade elements for U-Value and Solar Heat Gain Coefficient (g-Value)



The Tropical Technologies Laboratory (T2 Lab):

- Innovative BIPV façade solutions (incl. white, black, colored, semi-transparent, bifacial, and digital printed BIPV technologies)
- BIPV + food production

“BIPV SG” Workshop:

26 July 2019 – Friday (9.30-11.30)



“BIPV SG” aims to bring together early adopters, various governmental and regulatory bodies and relevant stakeholders from private and public sector to take on a leadership role in advancing and promoting BIPV in Singapore.

“BIPV SG” is meant to be an interactive platform to address barriers and find innovative solutions to overcome them in a interdisciplinary manner, covering the full value chain from design, component selection, construction, installation to operation & maintenance of novel, solar-powered BIPV- and BAPV solutions.

Who should attend: solar experts, architects, engineers, building professionals, building developers and various stakeholders from private and public sectors, government agencies, researchers and solar-enthusiasts.

What to expect:

- Discussions on BIPV technologies – multi-functionality
- How to achieve the “mind-set change” towards a “solar architecture”
- Future trainings/ workshops needs
- And many more

Feel free to join us for the first meeting of “BIPV SG”!