

IW-CIGSTech 9

9th International Workshop on CIGS Solar Cell Technology
18 June 2018, Stuttgart

// Introduction

It is our great pleasure to invite you to **IW-CIGSTech 9**, the international workshop on CIGS technology jointly organized by HZB and ZSW at ZSW in Stuttgart, Germany.

In addition to the already existing production lines, several manufacturing lines for CIGS thin-film solar modules are being installed so that production facilities in the GW range are getting operative by the end of this year. Recent progress in efficiency and promising developments of flexible, lightweight modules make the CIGS technology a serious contender for several types of PV installations. The status and potential of CIGS Technologies are presented in the White Paper for CIGS Thin-Film Solar Cell Technology, highlighting perspectives for investments. Augmented with input from the discussion and interviews during the workshop, a new edition of the white paper will be published and distributed after the workshop.

// About the workshop

IW-CIGSTech has been an important annual international workshop focusing on CIGS solar cell technology since 2010, combining scientific and technological aspects with their industrial applications. The workshop consists of invited talks, discussions and poster presentations. It will take place as a full-day event on Monday, 18th of June, 2018, and will be followed by an evening networking event at the ZSW premises.

// Field trip to NICE CIGS Production Line

On Tuesday, 19th June, there will be the option for a visit to the CIGS Line of NICE Solar Energy (formerly Manz CIGS Technology) in Schwäbisch Hall. Bus transfer will be provided: 9:00 a.m. departure at ZSW; returning to station Stuttgart-Vaihingen approx. 12:30 p.m.

We are looking forward to seeing you in Stuttgart!

Michael Powalla, ZSW

Rutger Schlatmann, HZB

Hans-Werner Schock,
Consultant Photovoltaic Technologies

- // Date:** Monday, 18th June 2018, 9:00-18:30 hrs
- // Location:** ZSW, Meitnerstr. 1, 70563 Stuttgart, Germany
- // Networking Event:** ZSW Stuttgart, Evening of 18th June
- // Field trip:** CIGS Line of NICE Solar Energy GmbH, Schwäbisch Hall, on 19th June
- // Website:** www.iw-cigstech.org
- // Contact:** info@iw-cigstech.org
- // Visual presentations:** If you would like to present a poster at the workshop, please send your name and a short abstract of 200 words max. to poster@iw-cigstech.org
- // Registration:** Only 230 Euro plus VAT, including coffee breaks, lunch, networking event and field trip



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// Program

Time	Title/subject	Presented by
09:00	Registration / Coffee / Putting up of Posters	
Introduction		
09:30	Welcome remarks	Prof. Dr. Rutger Schlatmann, HZB (GER) Prof. Dr. Michael Powalla, ZSW (GER)
CIGS Module Manufacturing		
10:00	Solar Frontier: Past, Present and Future	Dr. Tetsuya Aramoto, Solar Frontier (JPN)
10:20	Update of Solibro's Technology	Olle Lundberg, Solibro (SWE)
10:40	Development progress of functional layers and their interaction in the AVANCIS CIGS _{Se} cell stack	Dr. Thomas Dalibor, Avancis (GER)
11:00 Coffee Break		
Flexible CIGS Solar Cells and Modules		
11:30	MiaSolé Hi-Tech R&D progress update	Dmitry Poplavskyy, Miasolé HighTech (USA)
11:50	Monolithically connected flexible solar modules	Ulfert Rühle, Flisom (SUI)
12:10	Highly efficient CIGS thin film solar cells on flexible polyimide substrate: current status in Korea and our future challenges	Dr. Jae Ho Yun, Korea Institute of Energy Research KIER (KOR)
12:30	Made-to-measure flexible photovoltaic modules based on a novel hybrid sputtering/evaporation CIGS process	Andreas Zimmermann, Sunplugged (AUT) and Nikolaus Weinberger, Innsbruck University (AUT)
12:50 Light Lunch / Poster Session		
CIGS Manufacturing Perspectives		
14:00	Production Tools and Process Development for Large Scale CIGS Manufacturing	Dr. Dionysios Kolovos-Vellianitis, Manz AG (GER) Dr. Joachim Müller, NICE Solar Energy GmbH (GER)
14:20	Thin and light-weight CIGS	Eric Jaremalm, Midsummer (SWE)
14:40	Equipment challenges and solutions for CIGS mass production	Dr. Simon Hübner, Singulus (GER)
15:00 Coffee Break		
New Results of Materials Characterization		
15:30	Progress and Challenges of CIGS Consortium Japan	Dr. Shigeru Niki, AIST (JPN)
15:50	Characterization of Alkali Metal Effects in CIGS	Harvey Guthrey, NREL (USA)
16:10	Wide range Characterization of low temperature coevaporated CIGS films for high efficiency devices on polyimide substrates: what is specific to low temperature and alkali PDT processing?	Matteo Balestrieri, IPVF (FRA)
16:30	R&D for advancements in science and technology of CIGS (EU-Sharc25 project)	Dr. Wolfram Witte, ZSW (GER)
Joint Activities for Commercialisation and Marketing (White Paper)		
17:00	Discussion of White Paper for CIGS Thin-Film Solar Cell Technology	Chair: Jonathan Gifford, Senior Advisor DWR eco
18:30 Networking Event		
19th June Visit to the CIGS Line of NICE Solar Energy in Schwäbisch Hall (Fab Tour incl. Snack) 9:00 a.m. departure at ZSW; return at train station Stuttgart-Vaihingen approx. 12:30 p.m.		



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