

# **China PV Committee Meeting Summary and Minutes**

China Autumn Standards Meetings 2013

August 12th, 2013, Monday, 09:30 -15:40

1+2 Meeting Room, 2nd floor, Sheraton Hohhot Hotel

No.5, Ying Bin North Road, Xin Cheng District, Hohhot, Inner Mongolia, China

## **Next Committee Meeting**

Wednesday, October 23, 2013

## **Table 1 Meeting Attendees**

**SEMI Staff:** Allen Lu – SEMI China, Kai Qiao – SEMI China, Kris Shen – SEMI China, Annie An – SEMI China, James Wang – SEMI China

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
48th Research Institute	Cai	Xianwu	JA Solar	Li	Yanlin
Ally	Liu	Xingxing	Jinko Solar	Jin	Hao
Anyang Xuhui	Xue	Zhihong	JYT	Li	Zhixin
Bothleader	Zhou	Shudong	LDK	Cao	Sheng
CanadianSolar	Tang	Yingtang	Manz Taiwan	Liu	Gensheng
Chint Solar	Niu	Xinwei	Mettler Toledo	Lu	liming
CPRTC	Lu	Binglin	Semilab China	Huang	Li
CPVT	He	Li	Sevenstar	Li	Dongqi
CPVT	Jiang	Wei	Sevenstar	Zhen	Jianyu
CSU	Zhou	Jicheng	SIBCO	Schless	Ton
Das Asia	Wu	Bin	SIBCO	Zhu	Jin
Dowcorning	Gu	Xinhua	Silevo	Zhang	Kaijun
Fujian Metrology Institute	Yang	Aijun	SINOSICO	Chen	Gui'e
Fujian Metrology Institute	Luo	Haiyan	Suntech	Liang	Zhe
Fujian Metrology Institute	Li	Jie	Sweck	Zhong	junrong
GCL	Lv	Jinbiao	Sweck	Cheng	Zhongguang
GCL	Lu	Wenfeng	Tel Solar	Li	Bin
GDsolar	Wu	Xiexiang	Tel Solar	Li	Xiaoling
GDsolar	Jingrui	Wang	Tel Solar	Chen	Hongji
Giansolar	Zhao	Shengxia	Tianwei New Energy	Sheng	Wenting
Hanergy	Wu	Zhenyu	Tonsan	Zhao	haichuan
Hanergy	Zhang	Ying	Tonsan	Yang	Xue
Heraeus	Sun	Zhiqing	Tonsan	Zhang	Yonghui
Honbest	Rao	Hui	Tried	Jin	Zhe
Intertek	Ye	Songming	Trina	Zhou	Wei
JA Solar	Liu	Yong	Trina	Xiao	Taoyun
JA Solar	Wang	Xiaoyong	Trony	Jiang	Ximeng
JA Solar	Liu	Yong	Yingli	Sun	Zhonggang
JA Solar	Huang	Xinming			

## **Table 2 Leadership Changes**

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
Crystalline Silicon PV Back Contact Technology Task Force (new TF)		Ton Schless (SIBCO) Fengming Zhang (NJSP)

**Table 3 Ballot Results**

**Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

**Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
None		

**Table 4 Authorized Ballots**

<i>#</i>	<i>When</i>	<i>SC/TF/WG</i>	<i>Details</i>
5476	6-2013	PV Silicon Raw Materials Task Force	Doc. New Standard: Test Method for Determination of Total Carbon Content in Silicon Powder by Infrared Absorption After Combustion in an Induction Furnace
5477	6-2013	PV Silicon Raw Materials Task Force	New Standard: Test Method for Determining B, P, Fe, Al, Ca Contents in Silicon Powder for PV Applications by Inductively-Coupled-Plasma Optical Emission Spectrometry

**Table 5 Authorized Activities**

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
	TFOF	Crystalline Silicon PV Back Contact Technology Task Force	Charter: This TF will aggressively define standards for this new segment of the PV industry such that the mistakes of a still immature industry can be avoided early on in the adoption and application of these technologies.
5644	SNARF	Crystalline Silicon PV Back Contact Technology Task Force	New Standard: Terminology for Back Contact PV Cell and Module
5648	SNARF	PV Power Station Equipment Integrated Performance Task Force	New Standard: Test Method for the Integrated Efficiency of Installed PV Components

Note: SNARFs and TFOFs are available for review on the SEMI Web site at:

<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

**Table 6 New Action Items**

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
None		

**Table 7 Previous Meeting Action Items**

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</i>
ChinaPV-061 3-01	SEMI China	Propose to ISC to expand the Photovoltaic charter and scope, cover the standards of PV power station area	Failed
ChinaPV-061 3-02	PV Power Station Equipment Integrated Performance Task Force Leader	Develop the standards of PV power capacity efficiency and system efficiency	Completed

## 1 Welcome, Reminders, and Introductions

Committee member Zhixin Li chair the meeting and welcome all attendees, all the attendees introduced themselves. Kris Shen called the meeting to order at 9:40 AM. The meeting reminders on antitrust issues, intellectual property issues and effective meeting guidelines were reviewed.

Agenda was reviewed.

## 2 Review of Previous Meeting Minutes

Minutes were reviewed. No change was made.

**Motion:** To accept the minutes of the previous meeting as submitted

**By / 2<sup>nd</sup>:** Yong Liu (JASolar)/ Yingtang Tang (CanadianSolar)

**Discussion:** None

**Vote:** 31-0. Motion passed

Attachment-1, China PV TC Minutes 20130628.pdf

## 3 Staff Report

Kris Shen (SEMI) gave the staff report. Highlights

- Overview the SEMI Global 2013 and early 2014 Calendar of Events
- Remind the upcoming SEMI standards ballots submission deadline, and remind to vote for Cycle 5
- Remind that how to get SEMI standards
- Recently Published 2 PV Standards
  - [SEMI PV48-0613](#) Specification for Orientation Fiducial Marks for PV Silicon Wafers
  - [SEMI PV49-0613](#) Test Method for the Measurement of Elemental Impurity Concentrations in Silicon Feedstock for Silicon Solar Cells by Bulk Digestion, Inductively Coupled-Plasma Mass Spectrometry

Attachment-2, SEMI Staff Report 20130812.pdf

## 4 Liaison Reports

### 4.1 North America PV Materials Committee

Kai Qiao (SEMI China) reported. Highlights:

- Next meeting - North America Fall Standards Meetings, SEMI HQ, San Jose, CA, October 30, 2013
- New SNARFs
  - PV Electrical & Optical Measurement TF
    - Doc. 5608: Line-item Revision to SEMI PV13-1111, Test Method for Contactless Excess-Charge-Carrier Recombination Lifetime Measurement in Silicon Wafers, Ingots, and Bricks Using an Eddy-Current Sensor

Attachment-3, NA Liaison Report PV Materials 20130718.ppt

### 4.2 European PV Equipment Automation Committee

Kai Qiao (SEMI China) reported. Highlights:

- Next meeting - October 8-10, 2013, SEMICON Europa, Dresden, Germany
- New SNARFs
  - Doc 5566: Line Item Revision to SEMI PV002-00-0709E Guide for PV Equipment Communication Interfaces (PVECI), modify requirement [PV02-RQ-00007-00] to allow implementation of new namelist requests instead of required documentation.

Attachment-4, EU PV Equipment Liaison Report 20130313.ppt

### 4.3 Europe PV Materials Committee

Kai Qiao (SEMI China) reported. Highlights:

- Next meeting - Oct 7, 2013, SEMICON Europa, Dresden, Germany
- Authorized ballots for Cycle 5-2013
  - Line Item Revision to PV42, Test Method for In-Line Measurement of Waviness on PV Silicon Wafers by a Light Sectioning Technique Using Multiple Line Segments
  - New Standard, Test Method for In-line Characterization of PV Silicon Wafers regarding Grain Size
  - New Standard, Test Method for In-line Characterization of PV Silicon Wafers by Using Photoluminescence

Attachment-5, EU PV Materials Liaison Report 20130704.ppt

#### 4.4 Japan PV Automation Committee

Kai Qiao (SEMI China) reported. Highlights:

- Working on Doc. #5223, New Subordinate Standard: Media Interface Specifications for a Horizontal Communication between Equipment for Larger Sized Substrate Oriented Photovoltaic Fabrication System  
Attachment-6, JP\_PVAuto\_Liaison 20130312\_R0.2.ppt

#### 4.5 Japan PV Materials Committee

Kai Qiao (SEMI China) reported. Highlights:

- Working on
  - Doc. #5417, New Standard: Test Method for Measurement of Defects in PV Silicon Wafers in PV Modules by Electroluminescence Imaging
  - Doc. #5532, New Standard: Test Method for Measurement of Cracks in PV Silicon Wafers in PV Modules by Laser Scanning

Attachment-7, JA\_PVM\_NA\_SW\_R0.1.pptx

#### 4.6 Taiwan PV Committee

Kai Qiao (SEMI China) reported. Highlights:

- Next meeting – July 25, 2013, SEMI Office, Hsinchu
- New TF- Organic and Dye Sensitized Solar Cell TF
  - Charter: The objective is to develop technical Standards related to organic photovoltaic (OPV) and dye sensitized solar cell (DSSC), including new test methods, standardization and evaluation of OPV/DSSC products and components.

Attachment-8, Taiwan PV\_Liaison\_20130619.ppt

### 5 Ballot Review

None

### 6 Subcommittee & Task Force Reports

#### 6.1 PV silicon wafer TF

- Updated the document of Doc. 5382, Specification for Quasi-monocrystalline Silicon Wafers used in Photovoltaic Solar Cells, balloting now in cycle 5-2013

Attachment-9, PV Silicon Wafer TF Report.ppt

#### 6.2 Crystalline Silicon PV Module TF

- Finished the draft of Doc. 5563, Specification for Framing Tape for PV Modules in July, collecting the comments in task force now.

Attachment-10, Crystalline Silicon PV Module TF Report.pptx

#### 6.3 Metal Paste for Crystalline Silicon Solar Cells TF

- Finished draft document 5426.
- Finished draft document 5427.
- Internal meeting will be held on 14th Aug.

Attachment-11, Metal Paste TF Report.pptx

#### 6.4 Poly-silicon Packaging Materials Task Force

- Updated the Doc. 5428, Specification for Impurities in Polyethylene Packaging Materials for Poly-silicon Feedstock, balloting now in cycle 5-2013
- Doc. 5564, Test Method for the Measurement of Chlorine in Silicon by Ion Chromatography, balloting now in cycle 5-2013

Attachment-12, Polysilicon Packaging Materials TF Report.pptx

#### 6.5 PV Diffusion Furnace Test Methods Task Force

- According to experts' opinions in SEMI Summer Meeting, hold a conference on July 3 and developed a next step.
- In order to improve the standard we invited other vendors (JA solar, Trina solar) to participate in TF Attachment-13, PV Diffusion Furnace Test Methods TF Report.ppt

#### 6.6 PV Silicon Raw Materials Task Force

- Working on 3 documents
    - Doc. 5476, New Standard: Test Method for Determination of Total Carbon Content in Silicon Powder by Infrared Absorption after Combustion in an Induction Furnace., request for ballot cycle 6-2013
    - Doc. 5477, New Standard: Test Method for Determining B, P, Fe, Al, Ca Contents in Silicon Powder for PV Applications by Inductively-Coupled-Plasma Optical Emission Spectrometry, request for ballot cycle 6-2013
    - Doc. 5564, New Standard: Test Method for the Measurement of Chlorine in Silicon by Ion Chromatography. in ballot cycle 5-2013 now.
- Attachment-14, PV Silicon Raw Materials TF Report.ppt

#### 6.7 Silicon Thin Film PV Module Task Force

- Updated the draft of Doc. 5478, Test method for thin-film silicon PV modules light soaking, plan to submit to TC authorized for ballot in Oct.

Attachment-15, Silicon Thin Film PV Module TF Report.ppt

#### 6.8 Anti-reflective Coated Glass Task Force

- SEMI-PV47-0513 Specification for Anti-Reflective Coated Glass, Used in Crystalline Silicon Photovoltaic Modules Published in May, Task Force inactive now.

#### 6.9 PV Power Station Equipment Integrated Performance Task Force

- Recruiting the TF member, there are 19 members now
  - Initiate the SNARF of New Standard: Test method for the System Efficiency of PV Power Station
- Attachment-16, PV Power Station Equipment Integrated Performance TF Report.pptx

### 7 Old Business

None

### 8 New Business

#### 8.1 Request for Ballots in cycle 6-2013

- Doc. 5476, New Standard: Test Method for Determination of Total Carbon Content in Silicon Powder by Infrared Absorption After Combustion in an Induction Furnace

**Motion:** To approve Doc. 5476 for Balloting in cycle 6-2013

**By/2<sup>nd</sup>:** Li He (CPVT)/ Xinwei Niu (Chint Solar)

**Discussion:** **Q:** Is this test method necessary? — Xinwei Niu (Chint Solar)  
**A:** It is very necessary for the current PV industry. — Jinbiao Lv (GCL)

**Vote:** 23-0, Motion Passed

- Doc. 5477, New Standard: Test Method for Determining B, P, Fe, Al, Ca Contents in Silicon Powder for PV Applications by Inductively-Coupled-Plasma Optical Emission Spectrometry

**Motion:** To approve Doc. 5477 for Balloting in cycle 6-2013

**By/2<sup>nd</sup>:** Guie Chen (SINOSICO)/ Xiexiang Wu (GDSolar)

**Discussion:** **Q:** Is this test method a pioneering standard? — Xinwei Niu (Chint Solar)

A: Yes, it is, the current standard in the PV industry cannot test the content of B and P. This test method can control and test the B and P content accurately. —Wenfeng Lu(GCL)

**Vote:** 13-0, Motion Passed

## 8.2 New SNARFs & TFOFs

- SNARF- New Standard: Terminology for Back Contact PV Cell and Module

**Motion:** To approve the SNARF

**By/2<sup>nd</sup>:** Ton Schless(SIBCO)/ Yong Liu(JAsolar)

**Discussion:** The produce process, test method and related procedure of back contact cell and module is totally different. It is very hard to make a definition, even IEC still not make this standards. Standards should be good for the market, why we want to give so much energy on such an indeterminacy standard? —Yingtang Tang (Canadiansolar)

Which area is this standard will focus on? Focus on both 2 different technology? — Xinwei Niu (Chint Solar)

It will just focus on back contact technology terminology. — Ton Schless(SIBCO)

The back contact technology is very important for the future PV industry. — Yong Liu(JAsolar)

The market share of the back contact cell and module still too small, it is too early to make this standard. — Hao Jin (Jinko Solar)

It is very important to develop the terminology standard on back contact technology area, it will helpful this technology development. — Ton Schless(SIBCO)

**Vote:** 11-4, Motion Passed

- SNARF- New Standard: Practice for Back Contact Module Assembly

**Motion:** To approve the SNARF

**By/2<sup>nd</sup>:** Ton Schless(SIBCO) / Wenting Sheng (Tianwei New Energy)

**Discussion:** This standard will be involved IP issue. Even IEC group do not develop the standards on this area because the IP. —Yingtang Tang (Canadiansolar)

This scope of the SNARF is too wide. If it focus on MWT, it is OK. — Yong Liu(JAsolar)

**Vote:** 4-7, Motion Failed

- TFOF- New Task Force: PV Back Contact Cell and Module Technology

**Motion:** To approve the TFOF

**By/2<sup>nd</sup>:** Ton Schless(SIBCO) / Yong Liu(JAsolar)

**Discussion:** This task force should include entire industry sectors. — Yong Liu(JAsolar)

Does Crystalline Silicon PV Module Task Force contain this back contact module area? -- Wenting Sheng (Tianwei New Energy)

Yes, it does. — Kris Shen (SEMI China)

TC members suggested change the TF name to *Crystalline Silicon PV Back Contact Technology Task Force*

**Vote:** 18-0, Motion Passed

- SNARF- New Standard: Test Method for the System Efficiency of PV Power Station

**Motion:** To approve the SNARF

**By/2<sup>nd</sup>:** Jingrui Wang(GDSOLAR) / Yingtang Tang (Canadiansolar)

**Discussion:** Kris Shen reminded that the SNARF is out of the SEMI PV committee scope, PV committee doesn't cover the PV power station area, we should focus on the upstream area.

Kai Qiao reminded that if the China TC want to expand the PV TC to PV downstream area, it is necessary to submit the proposal in the upcoming ISC meeting in Japan.

There are many different ways to count the PV power station efficiency, how to get the efficiency in the test method? -- Wenting Sheng (Tianwei New Energy)

This method count the efficiency after the inverter point, before boosting. -- Jingrui Wang(GDSOLAR)

TC members suggested change the SNARF to *Test Method for the Integrated Efficiency of Installed PV Components*.

**Vote:** 26-1, Motion Passed

## 9 Action Item Review

### 9.1 Open Action Items

None

### 9.2 New Action Items

See Table 6.

## 10 Next Meeting and Adjournment

The next meeting of the China PV Standards committee will be on October 23, 2013, Wednesday, in Wuxi, China.

Respectfully submitted by:

Kris Shen

SEMI China

Minutes approved by:

Zhixin Li (JYT), TC member	2013/8/20
Guangchun Zhang (CanadianSolar), Co-chair	2013/8/22

**Table 8 Index of Available Attachments <sup>#1</sup>**

#	Title	#	Title
1	China PV TC Minutes 20130628.pdf	9	PV Silicon Wafer TF Report.ppt
2	SEMI Staff Report 20130812.ppt	10	Crystalline Silicon PV Module TF Report.pptx
3	NA Liaison Report PV Materials 20130718.ppt	11	Metal Paste TF Report.pptx
4	EU PV Equipment Liaison Report 20130313.ppt	12	Polysilicon Packaging Materials TF Report.pptx
5	EU PV Materials Liaison Report 20130704.ppt	13	PV Diffusion Furnace Test Methods TF Report.ppt
6	JP_PVAuto_Liaison 20130312 R0.2.ppt	14	PV Silicon Raw Materials TF Report.ppt
7	JA_PVM_NA_SW_R0.1.pptx	15	Silicon Thin Film PV Module TF Report.ppt
8	Taiwan PV_Liaison_20130619.ppt	16	PV Power Station Equipment Integrated Performance TF Report.pptx

#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at [www.semi.org](http://www.semi.org). For additional information or to obtain individual attachments, please contact [SEMI Staff Name] at the contact information above.