



PV Committee China TC Chapter
PV Materials Committee China TC Chapter
Joint Meeting Summary and Minutes

China SpringStandards Meeting 2019

April 26th, 2019, 09:00-17:30

InterContinental Shanghai Hongqiao NECC, No.1700 Zhuguang Road, Qingpu, Shanghai, China.

TC Chapter Announcements

Next TC Chapter Meeting

China Fall Standards Meeting 2019

Friday, October 25th, 2019, 09:00-17:30

Beijing, China

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs:GuangchunZhang(CSI)

SEMI Staff:Daniel Qi – SEMI China, Isadora Jin – SEMI China, Mina Chen – SEMI China, Ein Wu (SEMI China)

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
ANDEX	Peng	Sai	ANDEX	Zhou	Sheng
CPVT	He	Li	Canadian Solar	Zhang	Guangchun
Canadian Solar	Xu	Tao	Canadian Solar	Guo	Suqin
Lightway	Li	Huilin	Gain Solar	Xu	Ying
Gain Solar	Zhao	Weiwei	Gain Solar	Ma	Ming
GCL	Wan	Yuepeng	GCL	Lv	Jinbiao
NAURA	Li	Buzhong	TONSAN ADHESIVE INC.	Gu	Changyou
HYPERION	Zhao	Gang	HYPERION	Zhang	Zhifu
JYT	Chen	Hui	JYT	Guo	Dawei
JA Solar	Niu	Xinwei	JA Solar	Huang	Xinming
JA Solar	Huang	Shuwen	DZS	Ma	Qingtian
DZS	Wang	Peng	DZS	Qin	Saibing
Linton	Li	Zhixin	Linton	Liu	Erfei
Risen	Huang	Qiang	Risen	Hu	Yuting
Hanergy	Ding	Jian	Hanergy	Wu	Zhenyu
Hanergy	Li	Xuan	Hanergy	Xiao	Taoyun
Hanergy	Shi	Guocheng	Hanergy	Zhu	Wenkai
Hohai University	Zhang	Zhen	JNU	Mai	Yaohua
Heraeus	Zou	Qingqing	Heraeus	Peng	Donghua
Red Solar	Cai	Xianwu	Red Solar	Yang	Zhiquan
Sunport Power	Zhu	Haojie	Safest Semiconductor	Zou	Wentao



<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
GCL	You	Da	GCL	Hu	Dongli
GCL	Wang	Taoxia	GCL	Liu	Hai
GCL	Liu	Kuan	GCL	Wang	Guanglin
GCL	Lu	Wenfeng	Xinyang Normal University	Lu	Xiaoman
LDK	Li	Jianmin	IAWBS	Lu	Min
TÜV Rheinland	Yao	Yuanbo	LONGi	Zhu	Qiangzhong
LONGi	Ren	Gaigai	LONGi	Tian	Huiwu
LONGi	Wang	Xiangdong	LONGi	Wu	Linyong
DASOLAR	Liu	Yong	SINOSICO	Yan	Dazhou
SINOSICO	Chu	Dongxu	SINOSICO	Liu	Fenghua
Meyer Burger	Pu	Sherlock	SEMILAB	Huang	Li
GSolar	Zeng	Xiangchao	Asiachem	Zhu	Tinghui
Sunland	Zhu	Jingbing	Sunland	Liang	Zhe
Irwin	Liu	Xiaoxia	Talesun	Lian	Weifei
Crystal Clear Chemical	Fu	Hua	Crystal Clear Chemical	Liu	Bing
Maxwell	Yuan	Zhen	Maxwell	Wang	Xiaorui
Trina Solar	Zhou	Wei	Trina Solar	Ding	Zhiqiang
Trina Solar	Yan	Ping	Trina Solar	Jin	Yunhong
Suntech	Chen	Rulong	Darbond	Wang	Jianbin
Darbond	Li	Wei	Darbond	Yin	Qiangqiang
YINGLI	Song	Dengyuan	YINGLI	Ni	Jianxiong
YINGLI	Jiang	Jingna	YINGLI	Li	Yabin
YINGLI	Li	Yingye	SUNCHINE	Wang	Tong
Aikosolar	Feng	Wanqin	Jinko Solar	Li	Ning
SINOMA	Wang	Xiang	CESI	Feng	Yabin
CETC-48th	Long	Hui	CETC-48th	Zhou	Hongbiao
GGSolar	Yang	Yongfei	SIMIT	Shi	Qiang

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leader</i>
<i>Photovoltaic</i>		
Multi-wire Saws Task Force	Jingying Jia (CETC 48 th) Xianwu Cai (Red Solar) Zhixin Li (Linton)	ZHongbiao Zhou (CETC 48 th) Xianwu Cai (Red Solar) Zhixin Li (Linton)
<i>Photovoltaic Materials</i>		
None		



Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
<i>Photovoltaic</i>	
None	
<i>Photovoltaic Materials</i>	
None	

Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
<i>Photovoltaic</i>		
6295	New Standard: Test Method for Extension of Flexible Thin Film PV Modules	Passed with Technical Changes. Ratification ballot to be issued.
5661D	New Standard: Test Method for Electrical Parameters of Bifacial Solar Module	Passed with Technical Changes. Ratification ballot to be issued.
5983B	New Standard: Test Method for In-line Sheet Resistance Inspection	Failed and return to TF for re-work and reballot in Cycle 6-2019
6070D	New Standard: Guide for Identifying Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging	Failed and return to TF for re-work and reballot in Cycle 6-2019
<i>Photovoltaic Materials</i>		
6193A	New Standard: Specification for Trichlorosilane Used in Polysilicon Production	Passed as balloted

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

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

Table 5 Activities Approved by the GCS between meetings of the TC Chapter

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
<i>Photovoltaic</i>			
5983	SNARF	PV Diffusion Furnace Test Methods TF	New Standard: Test Method for In-line Sheet Resistance Inspection Is changed to New Standard: Test method for In-Line Sheet Resistance Inspection Using the Junction Photo-Voltage Method
<i>Photovoltaic Materials</i>			
None			

Table 6 Authorized Activities

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
<i>Photovoltaic</i>			



Table 6 Authorized Activities

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

#	Type	SC/TF/WG	Details
6542	SNARF	Building Integrated Photovoltaic (BIPV) Task Force	Guide for Scrap Judgement of Photovoltaic Modules in Building
6541	SNARF	Building Integrated Photovoltaic (BIPV) Task Force	Classification of Building Integrated Photovoltaic (BIPV)
-	TFOF		PV Mobile Energy TF
<i>Photovoltaic Materials</i>			
None			

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

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

Table 7 Authorized Ballots

#	When	TF	Details
<i>Photovoltaic</i>			
5983C	Cycle 6-2019	PV Diffusion Furnace Test Methods TF	New Standard: Test Method for In-line Sheet Resistance Inspection
6070E	Cycle 6-2019	PV Module TF	New Standard: Guide for Identifying Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging
5842D	Cycle 6-2019	Crystalline Silicon Solar Cell Task Force	New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance
6191	Cycle 6-2019	Testing Equipment TF	New Standard: Guide for the Design of Testing and Sorting Equipment for Crystalline Silicon Solar Cells
<i>Photovoltaic Materials</i>			
6458	Cycle 6-2019	PV Silicon Raw Materials TF	New Standard: Specification for Silicon Powder Used in Polysilicon Production

Table 8 SNARF(s) Granted a One-Year Extension

#	TF	Title	Expiration Date
<i>Photovoltaic</i>			
6069	PV Module TF	New Standard: Specification for Structural Silicone Adhesive for the Back Rail Fixture on PV Modules	2020/7/29
6073	PV Module TF	New Standard: Specification for Crystalline Silicon PV Modules with Integrated Power Optimizer	2020/7/29
<i>Photovoltaic Materials</i>			
None			

Table 9 SNARF(s) Abolished

#	TF	Title
<i>Photovoltaic</i>		
None		
<i>Photovoltaic Materials</i>		
None		

Table 10 Standard(s) to receive Inactive Status

Standard Designation	Title
<i>Photovoltaic</i>	
None	
<i>Photovoltaic Materials</i>	
None	

Table 11 New Action Items

Item #	Assigned to	Details
China PV-0426-01	SEMI Staff	Share 2019 critical dates
China PV-0426-02	SEMI Staff	Share SEMI Style Manual and SEMI Procedure Manual
China PV-0426-03	Task Force leaders	Develop more collaboration and communication.

Table 12 Previous Meeting Action Items

Item #	Assigned to	Details
ChinaPV-1102-02	Jianxiong Ni from YINGLI	Doc. 5661C need further develop and adopt the comments from the TC meeting
ChinaPV-1102-03	Hui Long from CETC48	Doc. 6191 need further develop and adopt the comments from the TC meeting

1 Welcome, Reminders, and Introductions

Committee co-chair Guangchun Zhang chaired the meeting and welcomed all attendees. All the attendees introduced themselves. Daniel Qi called the meeting to order at 09:00AM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed.

Agenda was reviewed.

Attachment: 1. Chinese SEMI Standard Meeting Reminders

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.



Motion: To approve the minutes of the previous meeting as written
By / 2nd: Yuepeng Wan (GCL)/ Zhixin Li (Linton)
Discussion: None
Vote: 45Y - 1 N, (Total 46 companies.) Motion Passed.
Attachment: 2. China PV&PVM TC Joint Fall Meeting Minutes 20181102

3 Liaison Reports

3.1 PV Materials North America TC Chapter

Isadora Jin (SEMI) reported for the PV Materials North America TC Chapter. Of note:

Action Item: Next meeting –SEMICON West. San Francisco CA, Wednesday, July 10, 2019

- The Co-chair of North America PV Materials TC is Hugh Gotts (Air Liquide).
- Ballot Results
 - Doc. 6367, Reapproval of 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 **Passed** as balloted.
 - Doc. 6368, Reapproval of SEMI PV43-0113, Test Method for the Measurement of Oxygen Concentration in PV Silicon Materials for Silicon Solar Cells by Inert Gas Fusion Infrared Detection Method **Passed** as balloted.
 - Doc. 6369, Reapproval of SEMI PV37-0912, Guide for Fluorine (F2), Used in Photovoltaic Applications **Passed** as balloted.

- Ballot authorized for review at SEMICON Europa

Reapproval of

- PV17-1012, Specification for Virgin Silicon Feedstock Materials for Photovoltaic Applications
- PV34-0213, Practice for Assigning Identification Numbers to PV Si Brick, Wafer and Solar Cell Manufacturers
- PV39-0513, Test Method for In-Line Measurement of Cracks in PV Silicon Wafers by Dark Field Infrared Imaging
- PV40-0513, Test Method for In-Line Measurement of Saw Marks on PV Silicon Wafers by a Light Sectioning Technique Using Multiple Line Segments
- PV41-0912, Test Method for In-Line, Noncontact Measurement of Thickness and Thickness Variation of Silicon Wafers for PV Applications Using Capacitive Probes
- PV46-0613, Test Method for In-Line Measurement of Lateral Dimensional Characteristics of Square and Pseudo-Square PV Silicon Wafers
- PV48-0613, Specification for Orientation Fiducial Marks for PV Silicon Wafers
- Abolished SNARF(s)
 - 5801, New Standard: Guide for the Planning, Implementing and Analyzing data from a Round Robin used to verify a Test Method – *Lack of interest; SNARF retired*

Attachment: 3. PV Materials NA TC Chapter Liaison Report July 2018

3.2 PV Materials Europe TC Chapter

Isadora Jin (SEMI) reported for the PV Materials Europe TC Chapter. Of note:

Action Item: Next meeting – Berlin, Germany. May 21, 2019.

- The Co-chairs of Europe PV Materials TC are C. Hagendorf (Fraunhofer Center for Solar Photovoltaics) and P. Wagner (Self).
- Ballot Results: All passed.
 - Doc. 6416, Reapproval of SEMI PV32-0312 Specification for Marking of PV Silicon Brick Face and PV Wafer Edge
 - Doc. 6417, Reapproval of SEMI PV34-0213 Practice for Assigning Identification Numbers to PV Si Brick, Wafer and Solar Cell Manufacturers
 - Doc. 6418, Reapproval of SEMI PV39-0513 Test Method for In Line Measurement of Cracks in PV Silicon Wafers by Dark Field Infrared Imaging
 - Doc. 6419, Reapproval of SEMI PV40-0513 Test Method for In Line Measurement of Saw Marks on PV Silicon Wafers by a Light Sectioning Technique Using Multiple Line Segments
 - Doc. 6420, Reapproval of SEMI PV41-0912 Test Method for In Line, Noncontact Measurement of Thickness and Thickness Variation of Silicon Wafers for PV Applications Using Capacitive Pro
 - Doc. 6421, Reapproval of SEMI PV46-0613 Test Method for In Line Measurement of Lateral Dimensional Characteristics of Square and Pseudo Square PV Silicon Wafers
 - Doc. 6422, Reapproval of SEMI PV48-0613 Specification for Orientation Fiducial Marks for PV Silicon Wafers
 - Doc. 6426, Reapproval of SEMI PV17-1012 Specification for Virgin Silicon Feedstock Materials for Photovoltaic Applications
- Status of draft: Test Method for Silicon PV Materials for light-induced degradation (LID)
 - 90% ready, undergoing final discussions
 - To be authorized for ballot at next TC meeting, May 2019

Attachment: 4. EU PV Materials Liaison Report March 2019 v1

3.3 PV and PV Materials Japan Joint TC Chapter

Isadora Jin (SEMI) reported for the PV and PV Materials Japan Joint TC Chapter. Of note:

Action Item: Next meeting: November 5, 2019, 13:30 – 16:00 at SEMI Japan Office, Tokyo, Japan

- The Co-chairs of Japan PV TC are Kazuhiko Kashima (Consultant) and Masaaki Yamamichi (RTS Corporation).
- The Co-chairs of Japan PV Materials TC are Kazuhiko Kashima (Consultant), Takashi Ishihara (Mitsubishi Electric) and Tetsuo Fukuda (AIST).
- Ballot Results
 - 6286: Line Items Revision to SEMI PV79-0817: Test Method for Exposure Durability of PV Cells to Acetic Acid Vapor
Line Item1: To replace the subfigure b: AC Equivalent Circuit in Figure 3: AC Impedance Characteristics
Passed as balloted.
- Five-Year Review
 - SEMI PV60-0115, Test Method for Measurement of Cracks in Photovoltaic (PV) Silicon Wafers in PV Modules by Laser Scanning
 - SEMI PV79-0818, Test Method for Exposure Durability of Photovoltaic (PV) Cells to Acetic Acid Vapor

Attachment: 5. 190419_LiaisonReport_JA_PVPVM_v1.0

3.4 Photovoltaic Taiwan TC Chapter

Isadora Jin (SEMI) reported for the PV Taiwan TC Chapter. Of note:

Action Item: Next Meeting –October, 2019 at Taiwan Autumn Meetings

- The Co-chairs of Taiwan PV TC are T.C. Wu (CMS/ITRI), J.S. Chen (Tera Solar) and Ray Sung (UL TWN)
- Committee Structure Changes
 - PV Package Performance TF was disbanded.
- Authorized Ballots in Cycle 8-2018 voting
- Authorized SNARFs
 - New Standards, Test Method for Durability of Flexible emerging PV
 - New Standards, Specification of reference device for indoor lighting simulator
 - Reapproval of SEMI PV56-1214 Test Method for Performance Criteria of Photovoltaic (PV) Cell and Module Package
 - Reapproval of SEMI PV57-1214 Test Method for Current-Voltage (I-V) Performance Measurement of Organic Photovoltaic (OPV) and Dye-Sensitized Solar Cell (DSSC)
- Authorized Ballots—Cycle 5-2019
 - Doc.6297, New Standard: Test Method For Current-voltage (I-V) Performance Measurement Of Perovskite Solar Cell (PSC), Part 1: Standard Testing Condition (STC)
- Abolished SNARF(s)
 - Doc. 6298, New Standard: Test Method for Non-Uniform Wind Loads Test for PV Module
—IEC TC 82 have the same topic
- Five-Year Review
 - SEMI PV56-1214, Test Method for Performance Criteria of Photovoltaic (PV) Cell and Module Package
 - SEMI PV57-1214, Test Method for Current-Voltage (I-V) Performance Measurement of Organic Photovoltaic (OPV) and Dye-Sensitized Solar Cell (DSSC)

Attachment: 6. 20190418_TWPV LiaisonReportV1

3.5 SEMI Staff Report

Isadora Jin (SEMI) gave the SEMI Staff Report. Of note:

Action Item:

- SEMI Standards Overview
- SEMI Global 2019 Calendar of Events
- 2019 Critical Dates for SEMI Standards Ballots
- SEMI Standards Publications
- PV Standards Publications in 2019 Q1
- Organization chart for China PV&PV Materials Committee
- A&R SC Membership Update
- China Photovoltaic TC Update

- Enhance Task Force Management
- Core Members Attendance Record
- Necessary Info. from Website

Attachment: 7. SEMI Staff Report 20190426

3.6 Other SDO (Standards Development Organization) Update

3.6.1 IEC TC 82 Update

- IEC TC82 Scope
- IEC TC82 Summary
- TC82 Working Groups
- Context and Background
- ‘PVQAT Effect’ on TC82
- ‘Certifiable’ Standards
- System Certifications
- Important New Efforts

Attachment: 8. TC82 for SEMI Apr 19

3.6.2 China Electronics Standardization Institute (CESI) Update

- 立项情况
- 标准发布情况
- 在研项目进展
- 2019年第一次工作会议情况

Attachment: 9. 中国光伏行业协会标准工作进展介绍 20190426

4 Ballot Review

NOTE 1: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.

4.1 Document 6193A, New Standard: Specification for Trichlorosilane Used in Polysilicon Production

Motion: Taoxia Wang (GCL) moved that this document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.

By / 2nd: Taoxia Wang (GCL) / Zhixin Li (LINTON)

Discussion: Guangchun Zhang (CSI): Is this first ballot for 6193?

Taoxia Wang (GCL): No. this is the second ballot time. We received many negatives since last ballot.

Vote: 39 in favor and 6 opposed. (Total 46 companies.) Motion Passed.

Attachment: 10 Ballot report for 6193A

4.2 Document 5983B, New Standard: Test Method for In-line Sheet Resistance Inspection

- Motion:** Hui Long (CETC-48) moved that the Committee accept the SEMI PV Diffusion Furnace Test Method Task Force recommendation to approve the distribution of SEMI Document 5983 for Letter Ballot.
- By / 2nd:** Hui Long (CETC-48) / Li Huang (SEMILAB)
- Discussion:** Guangchun Zhang (CSI): Peters' negative1 is persuasive. We should adopt his comments. The history of the document shall be described in background statement.
Yuepeng Wan (GCL): I agree with Peter Wagner.
Guangchun Zhang (CSI): Peter's negative2 is persuasive. It will be better to change the topic to Test method for In-Line Sheet Resistance Inspection Using the Junction Photo-Voltage Method. It is cared by many people at present.
- Vote:** 39 in favor and 6 opposed. (Total 45 companies.) Motion Passed.
- Attachment:** 11. Ballot_Review_for_Doc_5983B

4.3 Document 6295, New Standard: Test Method for Extension of Flexible Thin Film PV Modules

- Motion:** Xuan Li (Hanergy) move that this document passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes.
- By / 2nd:** Xuan Li (Hanergy) / Li Huang (SEMILAB)
- Discussion:** Guangchun Zhang (CSI): Xuan Li reports the document is very clear and precise.
- Vote:** 35 in favor and 7 opposed. (Total 42 companies.) Motion Passed.
- Attachment:** 12. Ballot Review -6295

4.4 Document 6070D, New Standard: Guide for Identifying Cell Defects Identifying in Crystalline Silicon PV Modules By Electroluminescence (EL) Imaging

- Motion:** Ping Yan (TRINA) moved that the Committee accept the PV Module Task Force recommendation to approve the distribution of SEMI Document 6070D for Letter Ballot in Cycle 6 during 2019.
- By / 2nd:** Ping Yan (TRINA) / Zhixin Li (LINTON)
- Discussion:** Wei Zhou (TRINA): Document must absorb all effective comments.
Guangchun Zhang (CSI): Do you fully understand minitab in motor?
Ping Yan (TRINA): Yes, we have verified.
Guangchun Zhang (CSI): It is very grateful for Peter to give comments and suggestions. The authors have to give clear explanations to reject voters and communicate frequently.
- Vote:** 32 in favor and 1 opposed. (Total 33 companies.) Motion Passed.
- Attachment:** 13. 6070D Ballot Review

4.5 Document 5661D, New Standard: Test Method for Electrical Parameters of Bifacial Solar Module

- Motion:** Jingna Jiang (YINGLI) moved that this document passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes..
- By / 2nd:** Jingna Jiang (YINGLI) / Rulong Chen (Suntech)
- Discussion:** Guangchun Zhang (CSI): Electric parameters of rear side are tested in one impulse. SEMI 5661 is quite different from IEC 60904. SEMI 5661 is in high quality.
Dengyuan Song (YINGLI): Bifacial solar modules need standards and 5661 is focusing on this area. We request ISC to review this document.
- Vote:** 33 in favor and 0 opposed. (Total 33 companies.) Motion Passed.
- Attachment:** 14. 5661D-双面发电组件电参数测试方法+意见整理

5 Subcommittee and Task Force Reports

5.1 PV Silicon Raw Materials Task Force

Wenfeng Lu (GCL) reported for the PV Silicon Raw Materials Task Force. This report contained information on:

Action Item:

- Introduced the task force's leaders and members.
- Introduced published standards.
- Working on
 - Doc 6193A, New Standard: Specification for Trichlorosilane Used in Polysilicon Production
 - Doc 6458, Specification for Silicon Powder used in Polysilicon Production
 - SEMI PV 88-1018 Chinese Translation

Attachment: 15. PV Silicon Raw Material

5.2 PV Silicon Wafer Task Force

Yuepeng Wan (GCL) reported for the PV Silicon Wafer Task Force. This report contained information on:

Discussion:

Co-chair: I suggest equipment companies are involved in task force. Maybe we can discuss standards about wafer size.

Action Item:

- Introduced the task force's leaders and members
- Introduced published standards.

Attachment: 16. PV Silicon Wafer TF Report

5.3 Crystalline Silicon Solar Cell Task Force

Yingye Li (Yingli) reported for the Crystalline Silicon Solar Cell Task Force. This report contained information on:

Action Item:

- Introduced the task force's leaders and members
- Introduced published standards.
- Working on
 - Doc 5842D, New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance
 - Doc 6459, New Standard: Test Method for Light Induced Degradation of Crystalline Silicon PV Cells at Elevated Temperature

Attachment: 17. Crystalline Silicon Solar Cell

5.4 PV Module Task Force

Wei Zhou (Trina Solar) reported for the PV Module Task Force. This report contained information on:

Action Item:

- Introduced the task force's leaders and members

- Introduced published standards
- Working on
 - Doc 5661D, New Standard: Test Method for Electrical Parameters of Bifacial Solar Module
 - Doc 6070D, New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging
 - Doc 6069, New Standard: Specification for Structural Silicone Adhesive for the Back Rail Fixture on PV Modules
 - Doc 6073, New Standard: Specification for Crystalline Silicon PV Modules with Integrated Power Optimizer
 - Doc 6113, New Standard: Test Method for Abrasion Resistance of the Polymer Backsheet of Crystalline Silicon Solar Modules

Motion: Wei Zhou (TRINA) moved that the Committee grant 6069 for a one-year extension.

By / 2nd: Wei Zhou (TRINA) / Li Huang (SEMILAB)

Discussion: Guangchun Zhang (CSI): What is your reason for one-year extension?

Wei Zhou (TRINA): There are changes in details of 6069 and there are changes of the authors.

Vote: 42 in favor and 4 opposed. (Total 46 companies.) Motion Passed.

Motion: Wei Zhou (TRINA) moved that the Committee grant 6073 for a one-year extension.

By / 2nd: Wei Zhou (TRINA) / Li Huang (SEMILAB)

Discussion: Guangchun Zhang (CSI): What is your reason for one-year extension?

Wei Zhou (TRINA): There are changes in details of 6073 and there are changes of the authors.

Vote: 42 in favor and 4 opposed. (Total 46 companies.) Motion Passed.

- **Attachment:** 18. SEMI PV Module TF Report 2019-04-23

5.5 Thin Film PV Module Task Force

Xuan Li (Hanergy) reported for the Thin Film PV Module Task Force. This report contained information on:

Discussion:

Co-chair: I suggest CNBM involved in task force.

Action Item:

- Introduced the task force's leaders and members
- Introduced published standards
- Working on
 - Doc 6295, New Standard: Test Method for Extension of Flexible Thin Film PV Modules
 - Doc 6402: New Standard: Test Method for Vibration Durability of Flexible Thin Film PV Module
 - Doc 6401: New Standard: Test Method for Indentation Force of Flexible Thin Film PV Modules

Attachment: 19. Thin Film PV Module

5.6 PV Diffusion Furnace Test Methods Task Force

Hui Long (CETC-48) reported for the PV Diffusion Furnace Test Methods Task Force. This report contained information on:

Discussion:

Co-chair: I suggest CETC-48th discuss about smart factory and do some survey and reports.

Action Item:

- Introduced the task force's leaders and members
- Introduced published standards
- Working on:
 - Doc 5983B, New Standard: Test Method for In-line Sheet Resistance Inspection

Attachment: 20. PV Diffusion Furnace TF

5.7 Multi-wire Saws Task Force

Hongbiao Zhou (CETC-48) reported for the Multi-wire Saws Task Force. This report contained information on:

Discussion:

Co-chair: Maybe we can organize a forum to discuss saws and equipments.

Action Item:

- Introduced the task force's leaders and members
- Introduced published standards
- Ask for opinions from members of TF and plan to propose new draft standards in the next meeting.

Attachment: 21. Multi-wire Saws TF

5.8 Testing Equipment Task Force

Hui Long (CETC-48) reported for the Multi-Wire Saws Task Force. This report contained information on:

Discussion:

Co-chair: we can extend the testing scale. At present many more testing companies are spring out. The standard about testing need strengthen.

Action Item:

- Introduced the task force's leaders and members
- Working on
 - Doc 6191, New Standard: Guide for the Design of Testing and Sorting Equipment for Crystalline Silicon Solar Cells

Attachment: 22. Testing Equipment TF

5.9 Building Integrated Photovoltaic (BIPV) Task Force

Yingye Li (YINGLI) reported for the Building Integrated Photovoltaic (BIPV) Task Force. This report contained information on:

Action Item:

- Introduced the task force's leaders and members
- Working on
 - SNARF, Classification of Building Integrated Photovoltaic (BIPV)
 - SNARF, Guide for Scrap Judgement of Photovoltaic modules in building

Attachment: 23. Building Integrated Photovoltaic (BIPV)

6 Old Business

6.1 Refer to Table 12 Previous Meeting Action Items

7 New Business

7.1 Requests for ballots in Cycle 6-2019

7.1.1 Doc.5842D, New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance

Motion: Tao Xu (CSI) moved the Committee to approve the Doc 6842D for ballot in cycle 6-2019.

By / 2nd: Tao Xu (CSI) / Zhixin Li (Linton)

Discussion: Co-chair: Please care about grammer and obey SEMI Style Manual and Procedure Manual.
Co-chair: Please add description about history in background statement.

Vote: 36 in favor and 0 opposed. (Total 36 companies.) Motion passed.

Attachment: 24. 5842D-MWT 太阳能电池灌穿孔电阻的检测方法

7.1.2 Doc.6191, New Standard: Guide for the Design of Testing and Sorting Equipment for Crystalline Silicon Solar Cells

Motion: Hui Long (CETC-48th) moved the Committee to approve the Doc 6191 for ballot in cycle 6-2019.

By / 2nd: Hui Long (CETC-48th) / Zhixin Li (LINTON)

Discussion: Co-chair: Please care about grammer and obey SEMI Style Manual and Procedure Manual.
Co-chair: Is there any sorting machines involved?
Co-chair: Is there any PV simulators involved?

Vote: 31 in favor and 5 opposed. (Total 36 companies.) Motion Passed.

Attachment: 25. Doc 6191 全球投票申请汇报

7.1.3 Doc.6458, New Standard: Specification for Silicon Powder Used in Polysilicon Production

Motion: Dongxu Chu (SINOSICO) moved the Committee to approve the Doc 6458 for ballot in cycle 6-2019.

By / 2nd: Dongxu Chu (SINOSICO) / Zhixin Li (LINTON)

Discussion: Dongxu Chu (SINOSICO): Silicon powder particle size range from 120 μ m to 600 μ m.
Co-chair: Please invite powder suppliers involved in task force. It is better to contact with suppliers and users and invite them in task force.
Dazhou Yan (SINOSICO): The industrial silicon powder varies from country to country.
Jinbiao Lv (GCL): China silicon powder export volume is huge.
Co-chair: multi-silicon companies should be involved.

Vote: 27 in favor and 7 opposed. (Total 34 companies.) Motion Passed.

Attachment: 26. Doc 6458 全球投票申请汇报

7.2 New TFOFs

7.2.1 New Task Force: PV Mobile Energy Task Force

Motion: Wenkai Zhu (Hanergy) moved the Committee to approve the new task force: PV mobile energy task force.

By / 2nd: Wenkai Zhu (Hanergy) / Zhixin Li (LINTON)

Discussion: Co-chair: Will you work on products standards? I think safety should be taken into account. What about electric parameter?

Zhenyu Wu (Hanergy): We will focus on mutual property first and then consider the specific.

Wei Zhou (TRINA): It is very hard to standardize products with diverse function.



Zhenyu Wu (Hanergy): We will test on mutual property first. Electric compatibility will be taken into consideration.

Wei Zhou (TRINA): This really require reliability.

Vote: 31 in favor and 5 opposed. (Total 36 companies.) Motion Passed.

Attachment: 27. SEMI PV Mobile Energy TFOF Report -2019-4-23

7.2.2 New Task Force: Photovoltaic System Task Force

Motion: Linyong Wu (LONGi) moved the Committee to approve the new task force: photovoltaic system task force.

By / 2nd: Linyong Wu (LONGi) /

Discussion: Co-chair: PV system is beyond SEMI PV Committee charter.

Qiang Huang (Risen): System does really deviate from PV Committee charter.

Zhixin Li (LINTON): SEMI PV Committee focus on equipments and materials.

Vote: 5 in favor and 31 opposed. (Total 36 companies.) Motion Failed.

Attachment: 28. LONGi-- Photovoltaic System Task Force 2019-04-18

7.3 New SNARFs

7.3.1 SNARF-6542, New Standard: Guide for Scrap Judgement of Photovoltaic Modules in Building

Motion: Guocheng Shi (Hanergy) moved that the committee approve the SNARF for New Standard: Guide for Scrap Judgement of Photovoltaic Modules in Building.

By / 2nd: Guocheng Shi (Hanergy) / Zhixin Li (LINTON)

Discussion: Yaohua Mai (JNU): Will BIPV standards satisfy structure?

Zhenyu Wu (Hanergy): The standards must revise periodically and detect after disaster.

Zhen Zhang (Hohai University): How to judge scrap?

Wei Zhou (TRINA): Does this make requirements on building?

Zhenyu Wu (Hanergy): BIPV range seems more wide.

Zhen Zhang (Hohai University): Maybe simple test is easy to realize.

Wei Zhou (TRINA): What about standards about BIPV testing?

Vote: 22 in favor and 11 opposed. (Total 33 companies.) Motion Passed.

Attachment: 29. Report of NEW SNARF-(hanergy) Apr.26,2019-终稿

7.3.2 SNARF-6541, New Standard: Classification of Building Integrated Photovoltaic (BIPV)

Motion: Weiwei Zhao (Gainsolar) moved that the committee approve the SNARF for New Standard: Classification of Building Integrated Photovoltaic (BIPV).

By / 2nd: Weiwei Zhao (Gainsolar) / Zhixin Li (LINTON)

Discussion: None

Vote: 30 in favor and 3 opposed. (Total 33 companies.) Motion Passed.

Attachment: 30. 嘉盛光电 BIPV 的分类标准

8 Next Meeting and Adjournment

The next meeting is scheduled for October 25th, 2019 in Beijing, China. See <http://www.semi.org/standards-events> for the current list of events.

Adjournment: 17:40.



Respectfully submitted by:

Isadora Jin

Standards, Senior Specialist

SEMI China

Phone: 86-21-60278578

Email: ijin@semi.org

Minutes tentatively approved by:

Guangchun Zhang (CSI), PV Committee and PV Materials Committee China TC Chapter Co-chair	<2019/05/20>
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1. Chinese SEMI Standard Meeting Reminders	2. China PV&PVM TC Joint Fall Meeting Minutes 20181102
3. PV Materials NA TC Chapter Liaison Report July 2018	4. EU PV Materials Liaison Report March 2019 v1
5. 190419_LiaisonReport_JA_PVPVM_v1.0	6. 20190418_TW PV Liaison Report V1
7. SEMI Staff Report 20190426	8. TC82 for SEMI Apr 19
9. 中国光伏行业协会标准工作进展介绍 20190426	10. Ballot report for 6193A
11. Ballot_Review_for_Doc_5983B	12. Ballot Review -6295
13. 6070D Ballot Review	14. 5661D-双面发电组件电参数测试方法+意见整理
15. PV Silicon Raw Material	16. PV Silicon Wafer TF Report
17. Crystalline Silicon Solar Cell	18. SEMI PV Module TF Report 2019-04-23
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#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. For additional information or to obtain individual attachments, please contact [SEMI Staff Name] at the contact information above.