China PV Standards Committee
Meeting Summary and Minutes
China Summer Standards Meeting 2016
July 29th, 2016, Friday, 09:00 -18:00
Yinchuan Ballroom 2, 2F, Yinchuan International Convention Centre, Yinchuan, Ningxia, China
NO.222 Qinshui North Avenue, Jinfeng District, Yinchuan, Ningxia, China

Next Committee Meeting
Friday, Nov. 25th, 2016

Table 1 Meeting Attendees
Co-Chairs: Guangchun Zhang (CSI)
SEMI Staff: Daniel Qi – SEMI China, Sophia Huang – SEMI China, Richard Jiang – SEMI China, Jesse Zhang – SEMI China, Peach Tao – SEMI China, James Amano – SEMI HQ

Company	*Last*	*First*	*Company*	*Last*	*First*
Astronergy	Huang	Wei	Leye	Xing	Tao
Borouge	Zhou	Xin	Lightway	Li	Huiling
CESI	Pei	Huichuan	Linton	Li	Zhixin
CESI	Feng	Yabin	Linton	Liu	Erfei
CESI	Cao	Kewei	LONGi	Deng	Liangping
CETC 48	Yang	Zhiquan	LONGi	Wang	Xiangdong
CETC 48	Cai	Xianwu	LONGi	Zhou	Rui
ChianSC	Zhou	Weizhong	LONGi	Deng	Hao
ChianSC	Tan	Haoyun	LONGi	Fu	Nannan
CPVT	He	Li	Lucky Film	Wang	Li
CPVT	Yun	Min	Lucky Film	Liang	Honglu
CSI	Zhang	Guangchun	Lucky Film	Li	Shuangxi
CSI	Xu	Tao	MKS	Wu	Lihua
CSI	Wang	Xusheng	MKS	Zhu	Yiwang
CSI	Zhao	Changrui	MKS	Yao	Dailiang
DIAT	Kang	Rongjiao	MKS	Shao	Wei
FerroTec	Sun	Liang	Semilab	Chen	Yue
FerroTec	Zou	Lihua	Sevenstar	Li	Dongqi
FJJL	Yang	Aijun	Sevenstar	Li	Buzhong
FJJL	Lin	Jianchun	Sevenstar	Sun	Pengtao
GCL	Huang	Qiang	Sinoma	Liu	Bing
GCL	Li	Xinchang	Sinoma	Diao	Xiaoqing
GCL	Wu	Yanrong	Sinoma	Zhou	Hua
GCL	You	Da	Sinosico	Yan	Dazhou
GCL	Lv	Jinbiao	Sinosico	Chu	Dongxu
GCL	Wan	Yuepeng	Sinosico	Cao	Junying
GCL	Liu	Xiaoxia	SunChine	Wang	Tong
GCL	Sun	Qiansong	SunChine	Wei	Shimeng
GGsolar	Wang	Xiaodong	Sunman	Zhu	Jingbing
Gsola	Zeng	Xiangchao	Sunport	Zhu	Haojie
GTAT	Zhou	Zhenxing	Talesun	Wei	Qingzhu
Hanergy	Zhang	Ying	Talesun	Lu	Junyu
Hanergy	Ding	Xiuyun	TEBA	Qiu	Yanmei
Heibei University	Mai	Yaohua	TEBA	Liu	Guoxia
Heraeus	Chen	Chilong	TIANWEI	Lin	Hongfeng
Heraeus	Wang	Yihua	Trina	Zhou	Wei
Honbest	Huang	Junran	Trina	Shu	Yunhua
JA Solar	Huang	Xinming	Trina	Ying	Li

JA Solar	Yang	Ruipeng	Trina	Quan	Peng
JA Solar	Xu	Desheng	Trina	Yan	Ping
Jinko	Jin	Hao	Trina	Xiao	Taoyun
Jinko	Wang	Zhiquan	Trina	Mao	Jing
Jinko	Huang	Ying	TUV	Li	Ningda
Jinko	Zheng	Peiting	TÜV NORD	Gan	Haiping
Jinko	Li	Ning	TÜV SÜD	Wu	Yaozhong
Jolywood	Zhao	Tongrong	Yingli	Song	Dengyuan
JYT	Guo	Dawei	Yingli	Tian	Tao
LDK	Hu	Dongli	Zhong Heng	Chen	Fayin
LDK	Liu	Linyan	ZK Energy	Wu	Zhenyu
LEONI	Ding	Erli	RIETECH	Zhang	Tao
Leye	Wang	Xiaoyong	Hohai University	Zhang	Zhen
Leye	Mark		LONGi	Zhong	Baoshen
Leye	Fu	Pengbo	LONGi	Luo	Xiangyu
Leye	Shen	Yuting			

Table 2 Leadership Changes

Group	*Previous Leader*	*New Leader*
None		

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.

Document #	*Document Title*	*Committee Action*
5841	New Standard: Guide for Specifying Low Pressure Horizontal Diffusion Furnace	**Failed** and return to TF for re-work
5842	New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance	**Failed** and return to TF for re-work

Table 4 Authorized Ballots

#	*When*	*SC/TF/WG*	*Details*
5767	Cycle7-2016	PV Silicon Wafer Task Force	New Standard: Guide for Material Requirements of Internal Feeders Used in Mono-crystal Silicon Growers
5925	Cycle7-2016	PV Module Task Force	New Standard: Specification for Dual-glass Module with Crystalline Silicon Terrestrial Solar Cell
6070	Cycle7-2016	PV Module Task Force	New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging

Table 5 Authorized Activities

#	*Type*	*SC/TF/WG*	*Details*
6072	SNARF	PV Silicon Wafer Task Force	Revision of SEMI PV29-0212, Specification for Front Surface Marking of PV Silicon Wafers with Two-Dimensional Matrix Symbols
6074	SNARF	Crystalline Silicon Solar Cell Task Force	New Standard: Test Method for Peeling Force between Electrode and Ribbon/Back Sheet
6070	SNARF	PV Module Task Force	New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging
6069	SNARF	PV Module Task Force	New Standard: Specification for Structural Silicone Adhesive for the Back Rail Fixture on PV Modules

Table 5 Authorized Activities

#	Type	SC/TF/WG	Details
6073	SNARF	PV Module Task Force	New Standard: Specification for Crystalline Silicon PV Modules with Integrated Power Optimizer

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

Item #	Assigned to	Details
ChinaPV-0716-1	SEMI HQ James Amano	Efforts to form a PV Materials TC Chapter in China are underway. When formation is approved, the new China PV Materials TC Chapter will be home to the PV Silicon Wafer TF and PV Silicon Raw Materials TF (which currently belong to the China PV TC Chapter). Ongoing
ChinaPV-0716-2	SEMI China Sophia Huang	Co-chair Guangchun Zhang suggested that next meeting starts at 09:00 AM
ChinaPV-0716-3	PV Silicon Raw Materials Task Force	Doc 5699 and 5700 is going to expire. Since the lead company Nanjing University hasn't got the experiment results yet, they'd like to abandon these two documents, proposed by Prof. Shoujun Xiao from NJU.
ChinaPV-0716-4	PV Module Task Force	Doc 5661 will expire on October 23th, 2016. Tao Tian moved to extend the Doc 5661 for one more year. It was approved by TC committee members. So this project will expire on Oct. 23th, 2017.

Table 7 Previous Meeting Action Items

Item #	Assigned to	Details	Status
ChinaPV-0316-01	7 task forces' leaders	Rearrange the task force members; make sure every member is active.	Ongoing
ChinaPV-0715-01	PV Module Task Force	Translate Chinese version of published 6 standards -- SEMI PV44-0513, SEMI PV45-0513, SEMI PV47-0513, SEMI PV61-0115, SEMI PV62-0215, SEMI PV63-0215	5 standards completed (SEMI PV44-0513, SEMI PV45-0513, SEMI PV47-0513, SEMI PV61-0115, SEMI PV63-0215) Others ongoing
ChinaPV-0715-02	PV Silicon Raw Materials Task Force	Translate Chinese version of published 3 standards -- SEMI PV50-0114, SEMI PV59-0115, SEMI PV64-0715	Ongoing
ChinaPV-0715-03	PV Diffusion Furnace Test Methods Task Force	Translate Chinese version of published 1 standards -- SEMI PV53-0514	Ongoing
ChinaPV-0715-04	Crystalline Silicon Solar Cell Task Force	Translate Chinese version of published 4 standards -- SEMI PV54-0514, SEMI PV58-0115, SEMI PV65-0715, SEMI PV66-0715	Ongoing

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 9:30 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 / 2nd: Yuepeng Wan (GCL)/Zhixin Li (Linton)
Discussion: None
Vote: 39-0. Motion passed
Attachment-1, China PV TC Meeting Minutes 20160315.pdf

3 Staff Report

Daniel Qi (SEMI China) gave the staff report. Highlights

- Overview the SEMI Global 2016 Calendar of Events
- SEMI standards publications update
- 5 Published PV Standards in 2016
- China Photovoltaic TC Update: Ran 4+ years, 17 TC meetings, 19 published standards, 18 standards in the pipe line, 7 task forces
- Indicated that enhance task force management
- Core Members Attendance Record
- SEMI standards website updated

Attachment-2, SEMI Staff Report 20160729.pdf

4 Liaison Reports

4.1 *North America PV Materials Committee*

Daniel Qi (SEMI China) reported. Highlights:

- Next meeting - NA Fall Standards Meeting. SEMI HQ, San Jose CA, Wednesday, Nov. 9, 2016
  - 3 Ballots passed
    - Doc. 5960A, Revision of SEMI PV21-1011 Guide for Silane (SiH4), Used in Photovoltaic Applications
    - Doc. 5961A, Revision of SEMI PV24-1011 Guide for Ammonia (NH3) in Cylinders, Used in Photovoltaic Applications
    - Doc. 5962A, Revision of SEMI PV26-1011 Guide for Hydrogen Selenide (H2Se) in Cylinders, Used in Photovoltaic Applications
  - Co-chair John Valley from Sun Edison stepped down

Attachment-3, PV Materials NA TC Chapter Liaison Report July 2016.pdf

4.2 *Europe PV Materials Committee*

Daniel Qi (SEMI China) reported. Highlights:

- Next Meeting- Oct. 25, 2016, Grenoble, France, in conjunction with SEMICON Europe
- One ballot passed with editorial changes and is being forward to ISC for procedural review
  - Doc 5889: New Standard: Test method on cell level for potential-induced degradation susceptibility of solar cells and module encapsulation materials

Attachment-4, Europe PV Standard Committee Liaison Report July 2016.pdf

4.3 *Japan PV and PV Materials Committee*

Daniel Qi (SEMI China) reported. Highlights:

- Hiromu Takatsuka from PVTEC stepped down from co-chair due to his retirement
- Doc 6016, New Standard: Test Method for Exposure Durability of PV Cells to Acetic Acid Vapor
  - Discussed at TF meeting on February 15, 2016.
  - Draft was distributed to TC Members of both PV and PV Materials for two weeks review on March 22, 2016.
  - Approved at the PV Materials Japan TC Chapter meeting held on April 18, 2016.

Attachment-5, 160630_LiaisonReport_JA_PV&PVM_V1.0.pdf

4.4 *Taiwan PV Committee*

Daniel Qi (SEMI China) reported. Highlights:

- Next meeting: Oct. 21, 2016@ITRI, Taiwan
- Approved Doc 5598A submit for cycle 7
  - Doc #5598A, Test Method for Durability of Low Light Intensity Organic Photovoltaic (OPV) and Dye Sensitized Solar Cell (DSSC)
- Approved one SNARF to apply Doc #
  - New Standard: Test Method for Polymer Foil dependent Discoloration of Silver Fingers on PV modules

Attachment-6, Taiwan PV Standard Committee Liaison Report_July 2016.pdf

5 Ballot Review

5.1 Cycle 4-2016: Doc 5842, New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance

Motion: Xusheng Wang (CSI)

By: Dengyuan Song (Yingli)

Discussion: Dengyuan Song (Yingli): (1) MeyerBurger is not the third party inspection institution. If CSI published the standards, Meyerburger can also not catch this standard. This is not a technical suggestion. (2) The suggestions from Joeng-Shein Chen are technical questions. CSI can consider and solve these suggestions when working on Doc 5842.

Guangchun Zhang (CSI): For the data in the table sheet, it will be better to present with PPT. Make a link between table data and PPT. This can clarify the ballot report. For Doc 5842, it should return to task force for re-work and re-ballot.

5.1.1 Document failed.

5.2 Cycle 4-2016: Doc 5841, New Standard: Guide for Specifying Low Pressure Horizontal Diffusion Furnace

Motion: Pengtao Sun (Sevenstar)

By: Dengyuan Song (Yingli)

Discussion: Guangchun Zhang (CSI): Wording should be standardized. You should take efforts and think about more when you write the document.

5.2.1 Document failed.

6 Task Force Reports

6.1 *PV Silicon Raw Materials Task Force*

- Cancelled 2 documents(Doc 5699, 5700) in work
  - Doc 5699 and 5700 is going to expire. Since the lead company Nanjing University hasn't got the experiment results yet, they'd like to abandon these two documents.

Attachment-7, SEMI PV Silicon Raw Materials Task Force Report_20160729.pdf

6.2 *PV Silicon Wafer Task Force*

- Working on
  - Doc 5767, New Standard: Guide for Material Requirements of Internal Feeders Used in Mono-crystal Silicon Growers
  - Doc 5843, Revision of SEMI PV22-1011, Specification for Silicon Wafers for Use in Photovoltaic Solar Cells
  - Doc 5927, Revision of SEMI PV22-1011, Specification for Silicon Wafers for Use in Photovoltaic Solar Cells

Attachment-8, PV Silicon Wafer TF Report V2-- July.29.2016.pdf

6.3 *Crystalline Silicon Solar Cell Task Force*

- Working on
  - Doc 5842, New Standard: Test Method for Metal-Wrap-Through Solar Cell Via Resistance

Attachment-9, SEMI Crystalline Silicon Solar Cell Task Force Report -2016.7.29.pdf

6.4 *PV Module Task Force*

- Working on
  - Doc 5661, New standard: Test Method for Electrical Parameters of Bifacial Solar Module
  - Doc 5725, New standard: Practice for Metal Wrap Through (MWT) Back Contact PV Module Assembly
  - Doc 5840, New Standard: Guide for Calibration of PV Module UV Test Chambers
  - Doc 5925, New Standard: Specification for Dual-glass Module with Crystalline Silicon Terrestrial Solar Cell
  - Doc 5968, New Standard: Guide for Sample Preparation Method for Photovoltaic Backsheet Performance Tests
- Doc 5661 will expire on October 23th, 2016. Tao Tian moved to extend the Doc 5661 for one more year. It was approved by TC committee members. So this project will expire on Oct. 23th, 2017.

Attachment-10, SEMI PV Module Task Force Report 2016-7-22.pdf

6.5 *Thin Film PV Module Task Force*

- Working on
  - Doc 5926, New Standard: Test Method for Bending Property of Flexible Thin Film PV Modules

Attachment-11, SEMI Thin Film PV Module Task Force Report 20160725.pdf

6.6 *PV Diffusion Furnace Test Methods Task Force*

- Working on:
  - Doc 5841, New Standard: Guide for Specifying Low Pressure Horizontal Diffusion Furnace
  - Doc 5983, New Standard: Test Method for In-line Sheet Resistance Inspection

Attachment-12, PV Diffusion Furnace Test Methods TF.pdf

6.7 *Multi-wire Saws Task Force*

- Working on:
  - None

Attachment-13, Multi-wire Saws Task Force(7.29).pdf

7 Old Business

None

8 New Business

8.1 *New SNARFs & TFOFs*

- SNARF- New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging

Motion: To approve the SNARF

By: Zhixin Li (Linton)

Discussion:

1. Dengyuan Song (Yingli): (1) I like this resolution related standard. Will the end user have the same interest with us? After this standard published, I hope it will be meaningful to the downstream companies. (2) Can the resolution test method be operated onsite?
2. Guangchun Zhang (CSI): Is there any testing companies for power stations? The requirements from end users are more and more strict. As manufacture companies, how to be in line with the end user to let the standard be interlinked. The manufacture company or task force should pay attention to the suggestions proposed by testing companies.
3. Tony Wang (Sunchine): Raised hand and ask Co- chair Guangchun Zhang's questions. We provide testing services for power stations. This EL related SANRF meet customers' needs.
4. Taoyun Xiao (Trina): Referencing to current testing methods is helpful to measure. We start to communicate with Fraunhofer, a German institute. They have about 6 defect image classifications, 41 types. They are decided by their appearance, location and power. We descript and define EL image of crystalline silicon photovoltaic modules as 20 categories.
5. Wei Zhou (Trina): What are the acceptance principles during acceptance period? This should be discussed with customers.
6. Jin Hao (Jinko): Can the standards published currently also appropriated to be used two years later in end users? Should we ask some end users to anticipate the future trend and needs? (Test methods, determined method, testing equipment)
7. Zhenyu Wu (ZK Energy): Actually, during acceptance period, people won't refer the 20 classifications as mentioned in EL PPT during their operation.
8. Jingbing Zhu (Suman): The development of testing will make challenge to the drafting of standards. There will be changes during the test process.

Vote: 40-0, Motion Passed

- SNARF- New Standard: Specification for Smart Crystalline Silicon PV Module
  (Updated SNARF Title -New Standard: Specification for Crystalline Silicon PV Modules with Integrated Power Optimizer)

Motion: To approve the SNARF

By: Zhixin Li (Linton)

Discussion:

1. Dengyuan Song (Yingli): This is a currently developing but uncertain technology. This SNARF scope is wide. I suggest to narrowing the scope. For example: DCDC/DCAC, Increase power generation performance optimizer. In the SNARF title, it will be better to change 'smart' to 'automatic'.
2. Tao Xu (CSI): For 'smart module', the scope is too big, the scene is too complicated. There are different kinds of uses. It is difficult to compare them. For example: Power test, reliability, safety, the scope is too big. I suggest to drafting an intelligent junction box, and then combine it with module. (2) What do you mean by 'component'? How it will be like if do an 'automatic'?

3. Jin hao (Jinko): Smart product has been doing in domestic about 2-3 years. With a big view, this is a good direction and standard. Detailed aspects need to be considered. I suggest to narrowing the scope.
4. Guangchun Zhang (CSI): (1) The scope is too big. I suggest you to learn about smart photovoltaic alliance. (2) When smart products are basically mature and there is a certain amount of orders on the market, it is suitable for drafting smart module related standards.
5. Wei Zhou (Trina): Now the SNARF title shows it's a 'specification', but the content of this standard looks like a designed and fixed standard.
6. Qiang Huang (GCL）: There are many applications for smart module. Especially in foreign countries, people are care about whether smart modules are reliable. We should make efforts and pay attention to the reliability of smart modules.
7. Yaohua Mai (Hebei University): When adding an optimizer, will smart module change a lot? This is the key point about whether to draft a standard.
8. Taoyun Xiao (Trina): From the aspect of smart module product, both Trina and GG Solar think this standard is necessary.
9. Jingbing Zhu（Sunman）: Someone says, putting the optimizer into modules can optimize the cell line. While others say we should optimize a single cell sheet.

Conclusion: Trina accepted technical members' suggestions for changing SNARF title. Then the SNARF was accepted. SNARF-New Standard: Specification for Crystalline Silicon PV Modules with Integrated Power Optimizer

Vote: 26-0, Motion Passed

- SNARF- New Standard: Specification for High Voltage Silicon PV Module

Motion: To approve the SNARF

By: Dengyuan Song (Yingli)

Discussion:

1. Dengyuan Song (Yingli): (1) Can it be accepted to the system? Should the scope be communicated and discussed? We should avoid the voltage which won't be involved in the future. (2) Manufacturer should find some interesting parameter. (3) Electric wire safety factors should be considered. System cost should reduce.
2. Xinming Huang (JA Solar): When drafting a standard, I hope main stream manufacturers can join in.
3. Zhenyu Wu (ZK Energy): Chinese module, at the current stage, testing is no problem. Because of testing consistency and module power degradation, there will be inconsistency when testing is used to power station testing.
4. Tony Wang (Sunchine): Has testing environment and testing equipment the same settings at their parties? System voltage on the international platform, regarding system installation safety issues for module, has task force take this problem into consideration?
5. Qiang Huang (GCL): Power stations between 2000v and 2800v are optimized. Currently, in the application for 1500v, if at least 1% of the reasons can be studied out, it will play an important role to our development.
6. Guangchun Zhang (CSI): scientific research, new developed program, these are not appropriate to discuss on the meeting. These are exploring researches.
7. Tao Xu (CSI): PID Testing can be done according to system, 1500v up is a kind of research, need repeated argumentation and proof. IEC fixed the thickness of back sheet with repeated argumentation for many years. High Voltage Silicon PV Module is appropriate to be a research program but not a standard.

Vote: 10-0, Motion not passed

- SNARF- New Standard: Specification for Tracking Identifier of Silicon Wafer for PV
  (Updated SNARF Title - Revision of SEMI PV29-0212, Specification for Front Surface Marking of PV Silicon Wafers with Two-Dimensional Matrix Symbols)

Motion: To approve the SNARF

By: Zhixin Li (Linton)

Discussion:

1. Dengyuan Song (Yingli): I suggested not starting a new SNARF but revising SEMI PV 29.
2. Jin hao (Jinko): The application prospect has a bright future. The upstream and downstream marking are different. Marking should have an appropriate degree so that it can be removed by the acidity or alkalinity.
3. Yuepeng Wan (GCL): Not to waste time, please start with a revision standard. Marking on silicon wafer is for sure useful. We should spare no effort to work on this. It will be also useful to the feedback and complain from customers. But this is not a must for issue. The efforts you made don't match the benefits you get. This is my feeling. If you apply the silicon wafer marking to research development, it is doable.
4. Qiang Huang (GCL): At first, please be sure there are needs for tracking identifier on the market. If so, I suggest appealing more companies to join in drafting this standard.
5. Chilong Chen (Heraeus): We are a silver paste related company. If this standard can be done, it will help us a lot.
6. Yaohua Mai (Hebei University): Based on marking and labelling, this standard is not necessary.
7. Da You（GCL）: How to unify the coding principle? This is more important than whether marking or labelling.
8. Attendee: (1) Silicon wafer is not the final product. Are modules or solar cells necessary to mark or label? (2) Silicon wafer is fragile, do you have integrated equipment? (3) Do solar cell or module related companies care about tracking identifier? (4) After marking and labelling, there is no people use it. This is also a problem.
9. Attendee: Back end customers like solar cell or module companies care more about the mass of every silicon wafer.
10. Guangchun Zhang (CSI): I suggest to hitting the mark on the edge.
11. Tony Wang (Sunchine): I hope it can trace to the technical information of silicon wafer.

Conclusion: Jinko Solar accepted technical members' suggestions for starting from a revision standard. They'll revise SEMI PV 29. SNARF- Revision of SEMI PV29-0212, Specification for Front Surface Marking of PV Silicon Wafers with Two-Dimensional Matrix Symbols

Vote: 31-0, Motion Passed

- SNARF- New Standard: Test Method for Peeling Force between Ribbon and Front Electrode, Ribbon and Back Electrode, Back Sheet and Back Surface Filed in Crystalline Silicon Solar Cell

  (Updated SNARF Title- New Standard: Test Method for Peeling Force between Electrode and Ribbon/Back Sheet)

Motion: To approve the SNARF

By: Zhixin Li (Linton)

Discussion:

1. Guangchun Zhang (CSI): This standard let me think about GB/T 29195-2012, General specification of crystalline silicon terrestrial solar cells. This standard mentioned many test methods, especially for solar cell test reliability. This is not only a specification, but also an improvement.

2. Dengyuan Song (Yingli): The SNARF title should be specific. English expression has some problem. Peeling force for back site paste uses wording 'BSF', the expression is not rigorous.

Conclusion: Talesun accepted technical members' suggestions for changing SNARF title. Most core members accepted their modified SNARF title. SNARF- New Standard: Test Method for Peeling Force between Electrode and Ribbon/Back Sheet

Vote: 30-0, Motion Passed

- SNARF- New Standard: Guide for Specifying Fused Silica Ceramic Crucibles for Solar Multicrystalline Silicon Crystal Growth

Motion: To approve the SNARF
By: Zhixin Li (Linton)
Discussion:

1. Zhixin Li (Linton): Five years ago someone has proposed similar standard. We should make sure whether there are similar standards.
2. Yabin Feng (CESI): We are working on a standard, similar with this one.
3. Dengyuan Song (Yingli): Crucible is a standard with very large workload. The standard content should include Physical property and stability.
4. Guangchun Zhang (CSI): (1) Crucible tests also need to consider safety issues. (2) If GuoBiao or other standard institution is already in process, then we won't do similar standards. If an industry standard is drafting, SEMI standard can also in progress.
5. Yuepeng Wan (GCL): Building material related standard organization already has similar standards. If GuoBiao has this kind of standard, we won't do similar ones.
6. Linyan Liu (LDK): (1) Industry standards can't be searched on the international standard platform. There is a related industry standard, published in 2011, but the content in that version is not applicable. (2) There is a SNARF requested for GuoBiao SNARF. Building material standard organization hasn't allowed that SNARF yet. They suggested to drafting crucible standards at SEMI. (3) Building material and photovoltaic are two different industries.

Vote: 2-0, Motion not passed

- SNARF- New Standard: Specification for Structural Silicone Adhesive for the Back Rail Fixture on PV Modules

Motion: To approve the SNARF

By: Zhixin Li (Linton)

Discussion: None

Vote: 28-0, Motion passed

8.2 *Request for Ballots in cycle 7-2016*

- Doc 5767, New Standard: Guide for Material Requirements of Internal Feeders Used in Mono-crystal Silicon Growers

Motion: To approve Doc 5767 for ballot in cycle 7-2016
By/2 nd: Dengyuan Song (Yingli)
Discussion: None
Vote: 29-0, Motion Passed

- Doc 5925, New Standard: Specification for Dual-glass Module with Crystalline Silicon Terrestrial Solar Cell

Motion: To approve Doc 5925 for ballot in cycle 7-2016
By/2 nd: Zhixin Li (Linton)

Discussion:

1. Dengyuan Song (Yingli): When a document requests for cycle ballot, it should include content, how to organize, the results of experiment and difficulties you meets.
2. Guangchun Zhang (CSI): What is the basis of setting up the standard, the standard content can be listed one by one. You should use test data to prove that the instability of Dual-glass reliability. Please be clear about this is caused by junction box or solar cell.
3. Zhixin Li (Linton): Document for SNARF and for ballot should be different. On the committee meeting, we check whether the standard draft meets SEMI Standard requirements. The detailed work should be finished in task force.
4. Wei Zhou (Trina): Normal module doesn't have hail test.
5. Tao Xu (CSI): (1) Is UV+DML+TC50+HF10dynamic load? This is a new sequence. There is no basis for it. There is no relationship between UV preconditioning and Dual-glass. (2) PID/BL should be viewed from different aspects. 6086 is basic and double 85 is an improvement. To do this standard, we understand it is to highlight the performance of dual-glass. We also tried PID test. We don't think continuing PID test is a good method because PID is an overall solution for system.
6. Attendee: This standard can be compared with IEC615 but not to fully refer to it. When we draft a standard, we should listen to other people's suggestions, Specific parameters can be modified.

Vote: 29-0, Motion Passed

- Doc 6070, New Standard: Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging

Motion: To approve Doc 6070 for ballot in cycle 7-2016
By/2 nd: Zhixin Li（Linton）/Ping Yan (Trina)
Discussion:

1. Dengyuan Song (Yingli): This SNARF was submitted in the morning, and in the afternoon it requested for cycle 7 ballot. Is it reasonable? Does it conform to SEMI Standard rules?
2. Taoyun Xiao (Trina): There are three Drafts presented by them which are SEMI Draft Document 5768 Specification for Testing Requirements of Electroluminescence Defect Detection System for Crystalline Silicon PV Modules, SEMI Draft Document 5773 Test Method for Cell Defects in Crystalline Silicon PV Modules by Using Electroluminescence (EL), SEMI Draft Document 5830 Classification for Electroluminescence Inspection of Crystalline Silicon Photovoltaic Modules. According to the comments from SEMI Standards North America Technical member Eric Sklar “combine Draft Documents 5768, 5773, and 5830 into a single Test Method.” when these three drafts were undergoing the global ballot.

Vote: 34-0, Motion Passed

8.3 Request for publish the Chinese version of standards

- SEMI PV54-0514 Specification for Silver Paste, Used to Contact with N+ Diffusion Layer of Crystalline Silicon Solar Cells/晶体硅太阳电池 N 型层接触用银浆技术规范

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)/Tongrong Zhao(Jolywood)
Discussion: None
Vote: 30-0, Motion Passed

- SEMI PV58-0115 Specification for Aluminum Paste Used in Back Surface Field of Crystalline Silicon Solar Cells/晶体硅太阳电池背场用铝浆技术规范

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)/Tongrong Zhao(Jolywood)
Discussion: None
Vote: 30-0, Motion Passed

- SEMI PV65-0715 Test Method Based on RGB for Crystalline Silicon (C-Si) Solar Cell Color/基于 RGB 的晶体硅太阳能电池颜色测试方法

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)/Tongrong Zhao(Jolywood)
Discussion: None
Vote: 30-0, Motion Passed

- SEMI PV66-0715 Test Method for Determining the Aspect Ratio of Solar Cell Metal Fingers by Confocal Laser Scanning Microscope/太阳能电池电极栅线高宽比测试：激光扫描共聚焦显微镜法

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)/Tongrong Zhao(Jolywood)
Discussion: None
Vote: 30-0, Motion Passed

- SEMI PV67-0815 Test Method for the Etch Rate of a Crystalline Silicon Wafer by Determining the Weight Loss/晶体硅片腐蚀速率测试方法：称重法

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)/Tongrong Zhao(Jolywood)
Discussion: None
Vote: 30-0, Motion Passed

- SEMI PV59-0115 Test Method for Determination of Total Carbon Content in Silicon Powder by Infrared Absorption after Combustion in an Induction Furnace/感应炉内燃烧后红外吸收法测定硅粉中总碳含量的测试方法

Motion: To approve for publish Chinese version of standard
By/2 nd: Zhixin Li (Linton)
Discussion: None
Vote: 31-0, Motion Passed

9 Action Item Review

9.1 *Open Action Items*
See Table 7.

9.2 *New Action Items*
See Table 6.

10 Next Meeting and Adjournment

The next meeting of the China PV Standards committee Chapter will be on November 25th, 2016, Friday, in Changshu, Jiangsu, China.

Respectfully submitted by:
Sophia Huang
SEMI China

Minutes approved by:

Guangchun Zhang (CanadianSolar), Co-chair	2016/8
Jun Liu (CESI) , Co-chair	2016/8

Table 8 Index of Available Attachments #1

#	*Title*	#	*Title*
1	China PV TC Meeting Minutes 20150315.pdf	8	PV Silicon Wafer TF Report V2-- July.29.2016.pdf
2	SEMI Staff Report 20160729.pdf	9	SEMI Crystalline Silicon Solar Cell Task Force Report -2016.7.29.pdf

3	PV Materials NA TC Chapter Liaison Report July 2016.pdf	10	SEMI PV Module Task Force Report 2016-7-22.pdf
4	Europe PV Standard Committee Liaison Report July 2016.pdf	11	SEMI Thin Film PV Module Task Force Report 20160725.pdf
5	160630_LiaisonReport_JA_PV&PVM_V1.0.pdf	12	PV Diffusion Furnace Test Methods TF.pdf
6	Taiwan PV Standard Committee Liaison Report_July 2016.pdf	13	Multi-wire Saws Task Force(7.29)..pdf
7	SEMI PV Silicon Raw Materials Task Force Report _20160729.pdf		

#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.