Procedural Review Voting Sheet

2013 Cycle 1

REGION: China
COMMITTEE: PV
EVENT: SOLARCON China 2013
DATE OF MEETING: 2013/3/18
PLACE OF MEETING: Kerry Hotel, Shanghai, China
COMMITTEE CO-CHAIRS: Guangchun Zhang/Canadiansolar, Jun Liu/CESI
SEMI STAFF: Kris Shen

A&R Voter: Name/Company
Date: 200X/MM/DD

I. Document Number & Title

Document	Document Title
5382	New Standard: Specification for Quasi-monocrystalline Silicon Wafers used in Photovoltaic Solar Cells

II. Tally

Voting Tally:

A minimum of 60% of the voting interests that have voting members within the technical committee must return votes. (Regulations ¶ 9.6.1)

	Return		Distribution		Return Rate	
Yellow	87	÷	144	=	60.4%	>=60%
Lilac & Others	52					
Total Vote	139					
Reject	0					
Accept	30					

A&R		Not approved
		Reason:

III. Rejects

Reject 1 (Peter Wagner/Self)

Negative 1 of Reject 1

Negative	Referenced Section			
	Reason	**1. Add Doc5382# in SEMI PV22** **I do not understand why this specification is not included in PV22, large parts of which are anyhow copied by doc 5382. In §7.3 doc 5382 even explicitly refers to the specifications as defined in PV22. The specification for the percentage of the largest single grain and its crystallographic orientation could be very easily added to PV22. Therefore I request to fail doc 5382 and to add the specifications to PV22.** **In order to justify a separate specification for the "quasi-monocrystalline" wafers the background information of doc 5382 states that the electrical properties are different from single crystalline or multicrystalline Si wafer. That is a very confusing statement. What is "different", the material is still silicon and according to PV22 the material characteristics can be specified in a wide range, which includes the electrical properties of "quasi-monocrystalline" wafers.**		
		2. The test method of Appendix needs to modify or remove and there are some places are not appropriate. **Appendix 1: This is an unsuccessful attempt to define a test method, but it does not meet the requirements for a SEMI Standards test method according to the SEMI Standards Procedure Guide. The following sections required for a test method are missing in doc 5382, Appendix 1: Purpose, Scope, Referenced Standards and Documents, Calculations, Report, Summary of Test Method**		
		3. The term "quasi-monocrystalline" is very awkward. **A wafer is either monocrystalline or not. A terms such as "large grained multicrystalline" would be better, it would describe the material more precisely. In general it would be sufficient to call the wafers "multicrystalline" and specify the percentage of the largest grain, its crystallographic orientation and the growth method of the ingot, and these three parameters could easily be included in PV22.**		
		Detail information. Please see "attachment 2--Negative and response for Peter.pdf"		
Withdrawal			No withdrawal made	**GO TO "Related" section**
			Withdrawal document received by staff on XXXX	**GO TO "Final" → (A)**
Related	**Motion and Reason**		"Related" is mutually agreed upon.	
			***This motion can be appended to the motion for Persuasive (See Persuasive Section)**	
			Negative is related **(needs over 1/3 votes to pass)**	
			Negative is not related **(needs 2/3 or more votes to pass)**	
			Reason	XXXX
	Motion by/2nd by	Name (Company)/Name (Company)		

	Discussion	**Response to Negative 1:** **(1) For Quasi-mono ingot, it covered mono and multi two kind types of silicon wafers, if adding this product into SEMI PV22, it's easy to confuse customer and difficult to understand.** **(2) Quasi-mono is a growing product, its future is difficult to determine, maybe it will develop into whole mono-crystalline, thus specification of it written as a single document is better.** **(3) In addition, we don't think it's necessary to extend PV22, in fact, PV22 already has huge information which is not easy to understand for the customer and if PV22 can be divided into two standards "specification for mono used in solar cell" and "specification for multi used in solar cell", it would be better.** **Response to Negative 2 and Negative 3** Detail information. Please see "attachment 2--Negative and response for Peter.pdf" The task force will continue to communicate with Dr. Peter Wagner, and the results of discussion will be report at the next China PV Standard Committee meeting.		
	Result of Vote (check ONE)	XX-XX		
			[Negative is related] > 1/3	**GO TO "Persuasive"**
			[Negative is not related] < 2/3	
			2/3=< [Negative is not related]	**GO TO "Final" → (B)**
Persuasive	**Motion and Reason**	x	Negative is related and persuasive **(needs over 1/3 votes to pass)**	
			Negative is related and not persuasive **(needs 2/3 or more votes to pass)**	
			Reason: XXXX	
	Motion by/2nd by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check ONE)	XX-XX		
		X	[Negative is related and persuasive] > 1/3	**GO TO "Final" → (E)**
			[Negative is related and not persuasive] < 2/3	
			2/3=<[Negative is related and not persuasive] <90%	**GO TO "Final" → (C)**
			90% =< [Negative is related and not persuasive]	**GO TO "Not Significant Finding Option"**
Not Significant Finding Option	**This option can only be used "if the committee finds a negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.5.3.3.2)**			
			It is mutually agreed upon to term the negative "not significant"	**GO TO → (D)**
			It is mutually agreed upon to term the negative "significant"	**GO TO → (C)**

	Motion		The negative is “not significant”.		
	Motion by/2nd by	Name (Company)/Name (Company)			
	Vote		XX-XX Motion passed with simple majority	**GO TO → (D)**	
			XX-XX Motion failed with simple majority	**GO TO → (C)**	
Final		Negative is:			
			(A)	withdrawn (counted under **h** in disposition)	
			(B)	not related (counted under **i** in disposition)	
			(C)	related and not persuasive (significant)	
			(D)	not significant (counted under **j** in disposition)	
		X	**(E)**	related and persuasive	**DOCUMENT FAILS**
			Comment generated. See comment #x		
A&R		**Not approved**			
		Reason:			

Disposition of Reject 1

	Original number of Negatives		**(g)**
	# of Negatives withdrawn		**(h)**
	# of Negatives found not related		**(i)**
	# of Negatives found not significant		**(j)**
Final		**g**-(**h**+**i**+**j**)=0	Reject **is Not Valid and is not** included in the denominator of § VI. Approval Conditions Check
		g-(**h**+**i**+**j**)>0	Reject **is** included in the denominator of § VI. Approval Conditions Check
		Reject without a Negative	**Not Valid**

Note: If all of the negative material included with a reject vote is withdrawn, determined to be not related, or determined to be not significant, the reject vote is not valid. (Regulations ¶ 9.4.3.3)

A&R	**Not approved**	
	Reason:	

Reject 2 (James Swirhun/Sinton Instruments)

Negative 1 of Reject 2

gati	**Referenced Section**	**Table 1, Item 3.3, Effective minority carrier lifetime (on brick)**

Related

Reason

The recommended change is to add a new section that separates these two methods and properly names the results:

3.3	Effective minority carrier lifetime (on brick)	[ ] ≥__ µs at ___ carrier density (cm^{-3})	[ ] Eddy-Current / QSSPC (SEMI PV13); [ ] Other (specify) ___
3.4	Microwave Decay Time (τ_1 or τ_e) (on brick)	[ ] ≥__ µs	[ ] µ-PCD (SEMI PV9)

Detail information. Please see "attachment 1--Negative and response for James.pdf"

Withdrawal

No withdrawal made	**GO TO "Related" section**
Withdrawal document received by staff on XXXX	**GO TO "Final" → (A)**

Motion and Reason

"Related" is mutually agreed upon.	
***This motion can be appended to the motion for Persuasive (See Persuasive Section)**	
Negative is related **(needs over 1/3 votes to pass)**	
Negative is not related **(needs 2/3 or more votes to pass)**	
Reason	XXXX

Motion by/2nd by

Name (Company)/Name (Company)

Discussion

1. We agree with you that a recommended value of effective minority carrier lifetime should not be given.
2. Microwave photoconductance decay (µ-PCD) method is just one of test methods for effective minority carrier lifetime measurement in bricks. If the results of this method do not equal effective minority carrier lifetime under conditions where the excitation level is not low or the decay time is greater than 10µs, one could use other appropriate test methods. So, it is not necessary to add new sections and name the results due to different test methods.
3. The recommended change is to add a note to µ-PCD test method:

3.3	Effective minority carrier lifetime (on brick)	[ ] ≥__ µs	[ ] µ-PCD (SEMI PV9)*
		[ ] ≥__ µs at ___ carrier density (cm^{-3})	[ ] Eddy-Current / QSSPC (SEMI PV13); [ ] Other (specify) ___

Note: Measurement of the excess carrier decay using µ-PCD test method results in the determination of the effective minority carrier lifetime when the density of injected carriers is very small. If the excitation level is not low, the measured decay time does not equal the effective minority carrier lifetime, in which case one could use other test methods, but it is expected to provide information that can be related to the properties of devices for which the material is subsequently used.

Dr.James accepted the modified revision.

Result of Vote (check ONE)

XX-XX

[Negative is related] > 1/3	**GO TO "Persuasive"**
[Negative is not related] < 2/3	

			2/3=< [Negative is not related]	**GO TO "Final" → (B)**
Persuasive	**Motion and Reason**		Negative is related and persuasive **(needs over 1/3 votes to pass)**	
			Negative is related and not persuasive **(needs 2/3 or more votes to pass)**	
			Reason XXXX	
	Motion by/2nd by		Name (Company)/Name (Company)	
	Discussion			
	Result of Vote (check ONE)		XX-XX	
			[Negative is related and persuasive] > 1/3	**GO TO "Final" → (E)**
			[Negative is related and not persuasive] < 2/3	
			2/3=<[Negative is related and not persuasive] <90%	**GO TO "Final" → (C)**
			90% =< [Negative is related and not persuasive]	**GO TO "Not Significant Finding Option"**
Not Significant Finding Option	**This option can only be used "if the committee finds a negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.5.3.3.2)**			
			It is mutually agreed upon to term the negative "not significant"	**GO TO → (D)**
			It is mutually agreed upon to term the negative "significant"	**GO TO → (C)**
	Motion		The negative is "not significant".	
	Motion by/2nd by		Name (Company)/Name (Company)	
	Vote		XX-XX Motion passed with simple majority	**GO TO → (D)**
			XX-XX Motion failed with simple majority	**GO TO → (C)**
	Final		Negative is:	
			(A) withdrawn (counted under **h** in disposition)	
			(B) not related (counted under **i** in disposition)	
			(C) related and not persuasive (significant)	
			(D) not significant (counted under **j** in disposition)	
			(E) related and persuasive **DOCUMENT FAILS**	
			Comment generated. See comment #x	
A&R			**Not approved**	
			Reason:	

Reject 3 (Win Baylies/BayTech Group)

Negative 1 of Reject 3

gat	**Referenced Section**	

	Reason	**There is no comments from Dr. Baylies, and the leader of TF already attempt to contact with,and the results will be report at the next China PV Standard Committee meeting.**		
Withdrawal			No withdrawal made	**GO TO "Related"**
			Withdrawal document received by staff on XXXX	**GO TO "Final" → (A)**
Related	**Motion and Reason**		"Related" is mutually agreed upon.	
			***This motion can be appended to the motion for Persuasive (See Persuasive Section)**	
			Negative is related **(needs over 1/3 votes to pass)**	
			Negative is not related **(needs 2/3 or more votes to pass)**	
			Reason: XXXX	
	Motion by/2nd by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check ONE)	XX-XX		
			[Negative is related] > 1/3	**GO TO "Persuasive"**
			[Negative is not related] < 2/3	
			2/3=< [Negative is not related]	**GO TO "Final" → (B)**
Persuasive	**Motion and Reason**		Negative is related and persuasive **(needs over 1/3 votes to pass)**	
			Negative is related and not persuasive **(needs 2/3 or more votes to pass)**	
			Reason: XXXX	
	Motion by/2nd by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check ONE)	XX-XX		
			[Negative is related and persuasive] > 1/3	**GO TO "Final" → (E)**
			[Negative is related and not persuasive] < 2/3	
			2/3=<[Negative is related and not persuasive] <90%	**GO TO "Final" → (C)**
			90% =< [Negative is related and not persuasive]	**GO TO "Not Significant Finding Option"**
Not Significant Finding Option	**This option can only be used "if the committee finds a negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.5.3.3.2)**			
			It is mutually agreed upon to term the negative "not significant"	**GO TO → (D)**
			It is mutually agreed upon to term the negative "significant"	**GO TO → (C)**
	Motion	The negative is "not significant".		
	Motion by/2nd by	Name (Company)/Name (Company)		

	Vote		XX-XX Motion passed with simple majority	**GO TO → (D)**
			XX-XX Motion failed with simple majority	**GO TO → (C)**
Final		Negative is:		
			(A) withdrawn (counted under **h** in disposition)	
			(B) not related (counted under **i** in disposition)	
			(C) related and not persuasive (significant)	
			(D) not significant (counted under **j** in disposition)	
			(E) related and persuasive	**DOCUMENT FAILS**
			Comment generated. See comment #x	
A&R		**Not approved**		
		Reason:		

IV. Comments

Comment 1

Comment	**Referenced Section**	**Table 1**
	From	**James Swirhun (Sinton Instruments)**
	Comment	**Maximum Iron concentration is not specified. It may be valuable to put this parameter in the document.**
	Discussion	**It is difficult to measure bulk iron concentration in mass production. And it could be estimated by minority carrier lifetime measurement in wafer and LID test in cell. Therefore, maximum iron concentration is not specified.** Dr. James accepted the response.

Action proposed	x	**The committee agreed to do one of the following actions.**	
		***No motion is required in this step.**	
		x	No further action was taken by the committee.
			Refer to the task force for more consideration.
			New Business
			Other
	Editorial Change		
			Case 1: No vote in this section :
			To be included and voted on in § 5. Summary of Editorial Changes.
			Case 2: Voted in this section :
			Original section number and at least one full sentence are required in "FROM" and "TO" fields.

		1	**FROM: Section xxx**
			To: Section xxx
			Justification (If necessary)
		2	**FROM: Section xxx**
			To: Section xxx
			Justification (If necessary)
Motion by/2nd			Name (Company)/Name (Company)
Vote			XX-XX Motion passed (or failed)
A&R			**Not approved**
			Reason:

V. Summary of Editorial Changes

Note: Original section number and at least one full sentence are required in "FROM" and "TO" fields.

1	**FROM: Section XXX**	
	TO: Section XXX	
	Justification: (If necessary)	
2	**FROM: Section XXX**	
	TO: Section XXX	
	Justification: (If necessary)	
Motion	To approve the above editorial changes	
Motion by/2nd by	Name (Company)/Name (Company)	
Discussion	XXXX	
Vote	XX-XX Motion passed (or failed)	
A&R	**Not approved**	
	Reason:	

VI. Approval Conditions Check

APPROVAL CONDITION 1: All negatives have been discussed and were withdrawn, found not related, or not persuasive. (Regulations ¶ 9.6.2)

APPROVAL CONDITION 2: At least 90% of the sum of the valid accept and reject votes must be accept. (Regulations ¶ 9.6.3)

Note: if both approval conditions are not satisfied, the document fails.

		Accepts		(Accepts + Valid Rejects)			
Approval Rate	=		/		=	**#DIV/0!**	**>=90%**

A&R		**Not approved**
	Reason:	

VII. Safety Check

See § 14 of the Regulations for further information

Motion:			This is not a Safety Document: when all safety-related information is removed, the document is still technically sound and complete.
			This is a Safety Document: when all safety-related information is removed, the document is not technically sound and complete.
			Safety Checklist (Regulations ¶ 14.3) is complete and has been included with the document throughout the balloting process.
Motion by/2nd by			Name (Company)/Name (Company)
Discussion			XXXX
Vote			XX-XX Motion passed or failed
A&R		**Not approved**	
		Reason:	

VIII. Intellectual Property Check

Note: This ballot may be all or part of a Standard or Safety Guideline. This IP check applies to the entire Standard or Safety Guideline. See § 15 of the Regulations for further information

	The meeting chair asked those present in person or by electronic link, if they were aware of any potentially material patented technology or copyrighted items* in the Standard or Guideline.		
		No potentially material patented technology or copyrighted items are known	**GO TO SECTION IX**
		Potentially material patented technology or copyrighted items are known but a Letter of Assurance (LOA) or copyright release for such material has been obtained or presented to the committee.	**GO TO SECTION IX**
		Potentially material patented technology or copyrighted items are known but an LOA or copyright release for some of the material(s) has NOT been obtained or presented to the committee	
	MOTION		Ask ISC for special permission to publish
			Quit activity
			Wait for LOA for patented technology or release of copyrighted items.
	Motion by/2nd by		Name (Company)/Name (Company)
	Discussion		XXXX
	Vote		XX-XX
	Final Action		Motion Passed
			Motion Failed
A&R		**Not approved**	
		Reason:	

* Note: Such potentially material patented technology or copyrighted items might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this ballot.

IX. Action for this document

Motion		This document passed committee review as balloted and will be forwarded to the A&R for procedural review.
		This document passed committee review with editorial changes and will be forwarded to the A&R for procedural review.

		This document failed committee review and will be returned to the task force for rework.
		This document failed committee review and work will be discontinued.
Motion by/2nd by		Name (Company)/Name (Company)
Discussion		XXXX
Vote		XX-XX
Final Action		Motion passed
		Motion failed
A&R		**Approved**
		Not approved
		Reason: