Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: North America
Global Technical Committee: Liquid Chemicals
TC Chapter Cochairs: Don Hadder (Intel), Steven Rogers (KMG Chemicals), Laura Ledenbach (PeroxyChem/Evonik), Koh Murai (MegaFluid Systems)
Standards Staff: Laura Nguyen

	Scheduled in Background Statement	Actual
Date	TBD	02/18/2021
Location	TBD	OVTCCM
Reason for Change of Date and/or Location (if changed)	COVID-19	

Note: See *Regulations* ¶ 9.5 Exceptions for allowable reason to change.

I. Document Number and Title

Document Number	Document Title
6646	New Standard: Guide for Reporting Density and Porosity of the Chemical Mechanical Planarization (CMP) Pads used in Semiconductor Manufacturing

II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (*Regulations* ¶ 9.6.2.1.1)

Voting Tally (with example values):

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	59	÷	95	=	62.1%	≥60%
Intercommittee Ballot	41					
Voting Interest Reject(s)	0		Total Voters with Rejects			0
Voting Interest Accept(s)	38					

Note: See *Regulations* § 3.2.1 for definition of Voting Interest.

III. Rejects
None

IV. Other Technical Issues
None

Note: TC Chapter may choose to address a technical issue that is not part of a Negative received on a Letter Ballot (i.e., a Comment or a reason not addressed by a Vote response) by handling it as a Negative and finding it related and technically persuasive. The TC Chapter may then fail the Document or address such technical issue by using the procedure defined in *Regulations* § 9.6.1.4.3 to make a technical change to the Document. (*Regulations* ¶ 9.6.1.4.2.5)

V. Comments
V- (i) Voters' Comments
Commenter 1 (Rafael Vargas-Bernal/ITSdl) - Comment 1

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.			
	In subsection 6.5, '.' must be deleted in 'factor.'. In subsection 12.5, add '.' at the end. In subsection 13.1, in ASTM D 2892 add ')' at the end.			
Action	**The TC Chapter agreed to do one of the following actions.**			
	*No motion is required in this step.			
		Already addressed by Commenter #, Comment #		
		No further action was taken by the TC Chapter.		
		Refer to the TF for more consideration.		
		New Business		
	X	Editorial Change		
	Options for editorial change (check one)		**Case 1: No vote in this section:**	
			To be included and voted on as a group in § VI. *Editorial Changes Other than Those Voted on in § V.*	
		X	**Case 2: Voted in this section:**	
			Original section number and at least one full sentence are required in "FROM" and "TO" fields.	
Editorial Changes	1	**FROM: Section/Paragraph 6.5, 12.5, 13.1** 6.5 Effect of pad orientations with regard to grooves on pad density was not widely researched but can be a factor. affecting reported pad density values[1]. 12.1 Other metrologies, such as nano indentation and/or DMA[8], or nano DMA can be used to assess indirectly pad porosity 13.1 *ASTM Standards*[10] ASTM D 4892 — Standard Test Method for Density of Solid Pitch (Helium Pycnometer Method		

		TO: Section/Paragraph 6.5, 12.5, 13.1 6.6 Effect of pad orientations with regard to grooves on pad density was not widely researched but can be a factor ~~,~~ affecting reported pad density values[1]. 12.1 Other metrologies, such as nano indentation and/or DMA[8], or nano DMA can be used to assess indirectly pad porosity. 13.2 *ASTM Standards*[10] ASTM D 4892 — Standard Test Method for Density of Solid Pitch (Helium Pycnometer Method)
		Justification (If necessary) Fix typographical error.

Motion	To approve above editorial change(s)
Motion by/2nd by	Jim Pedersen (EMI) / Alex Tregub (Intel)
Discussion	None
Vote	14 **Y**-0 **N**; Motion passed.

Commenter 2 (Bob McIntosh/GF Piping) - Comment 1

Comment		***TF/TC Chapter to fill in section/paragraph #, if necessary.**
		Please confirm that the related documents are all correct and relate directly to the measurement methods described in the standard.
Action		**The TC Chapter agreed to do one of the following actions.**
		***No motion is required in this step.**
		Already addressed by Commenter #, Comment #
	X	No further action was taken by the TC Chapter.
		Refer to the TF for more consideration.
		New Business
		Editorial Change

V-(ii) Comments Created by Handling Negative

None

VI. Editorial Changes Other than Those Voted on in § V

None

VII. Approval Conditions Check
VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations* ¶ 9.6.2.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.6.2.1.3)

Note: If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)				
Approval Rate	=	38	/	38	=	100.0%		≥90%

VII. – (ii) Approval Level (check one)

Note: See *Regulations* § 9.6.2 for further information.

X	**Globally Approved (No Ratification Ballot needed):** **The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.**
	Need a Ratification Ballot: **The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.**

VIII. Safety Check

Note: See *Regulations* § 15 for further information.

Motion	X	**This is not a Safety Document**, when all safety-related information is removed, the Document is still technically sound and complete. (*Regulations* ¶ 8.7.1)
		This is a Safety Document, when all safety-related information is removed, the Document is not technically sound and complete. (*Regulations* ¶ 8.7.2)
		Safety Checklist (*Regulations* ¶ 15.3) is complete and has been included with the Document throughout the balloting process. (*Regulations* ¶ 15.1.2)
Motion by/2nd by		Alex Tregub (Intel) / Matt Fritz (3M)
Discussion		None
Vote		14 **Y**-0 **N**; Motion passed.

IX. Intellectual Property (IP) Check

Note: This Letter Ballot may cover all or part of a Standard or Safety Guideline. Regardless of the coverage, this IP check applies to the entire Standard or Safety Guideline*. See *Regulations* § 16 for further information.

<table>
<tr><td>X</td><td colspan="5">The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see Regulations ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see Regulations ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also see, Regulations § 8.8)</td></tr>
<tr><td></td><td>X</td><td>The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)</td><td colspan="3">GO TO SECTION X.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">The question is answered in affirmative</td><td rowspan="2">Is any of the known IPs a patented technology?</td><td></td><td>Yes, at least one of them is a patented technology</td><td>GO TO IX (a) “Patented Technology” subsection</td></tr>
<tr><td></td><td>No</td><td>GO TO IX (b) “Copyright items” subsection</td></tr>
</table>

X. Action for This Document

<table>
<tr><td rowspan="5">Motion</td><td></td><td colspan="3">This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.</td></tr>
<tr><td>X</td><td colspan="3">This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.</td></tr>
<tr><td></td><td colspan="3">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.</td></tr>
<tr><td></td><td colspan="3">This Document failed TC Chapter review and will be returned to the TF for rework.</td></tr>
<tr><td></td><td colspan="3">This Document failed TC Chapter review and work will be discontinued.</td></tr>
<tr><td colspan="2">Motion by/ 2nd by</td><td colspan="3">Koh Murai (Mega Fluid Systems) / Alex Tregub (Intel)</td></tr>
<tr><td colspan="2">Discussion</td><td colspan="3">None</td></tr>
<tr><td colspan="2">Vote</td><td colspan="3">14 Y- 0 N</td></tr>
<tr><td colspan="2" rowspan="2">Final Action</td><td>X</td><td colspan="2">Motion passed</td></tr>
<tr><td></td><td colspan="2">Motion failed</td></tr>
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Note: If the use of PMPT or copyrighted item is justified by the TC Chapter, LOA or release form must be received before publication can proceed.