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(54) **Title:** NON FIRE-THROUGH ALUMINUM CONDUCTOR REFLECTOR PASTE FOR BACK SURFACE PASSIVATED CELLS WITH LASER FIRED CONTACTS

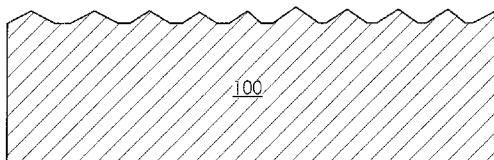


FIG. 1

(57) **Abstract:** This invention relates an aluminum (Al) conductor paste formulation and its method of application on rear side passivated locally laser fired contacts (LFC). Such Back Surface Passivated (BSP) Si-solar cells include aluminum conductor paste formulations and methods of application on rear side passivated locally opened vias; dot or line geometry or combination thereof employing laser ablation or chemical etching methods. Such Back Surface Passivated Si- solar cells include dielectric layers of Al₂O₃, SiN_x, SiO₂, SiC, α-Si, SiO₂/SiN_x, Al₂O₃/SiN_x, SiO₂Al₂/SiN_x. The Al-conductor paste of this invention achieves; (i) non-degradation of passivation stack, (ii) defect free surfaces and void free vias, (iii) a strong and uniform Back Surface Field (BSF) layer within dot vias and line vias.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER		<i>H01L 31/0224 (2006.01)</i> <i>H01L 31/18 (2006.01)</i>	
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)			
H01L 31/0224, 31/18, 31/04-31/078, 51/42-51/48			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, Information Retrieval System of FIPS (http://www.fips.ru)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	WO 2009/032429 A1 (FERRO CORPORATION et al.) 12.03.2009, [0012], [0036], [0034], [0037], [0038], [0039], [0048], [0060], [0065], [0072], tabl. 1-4, claims	1-8, 14-16, 20-23, 27-36, 38, 41-43	
Y		9-13, 17-19, 24, 25	
X	US 2007/0215202 A1 (FERRO CORPORATION) 20.09.2007, [0030]-[0032], [0040], [0041], tabl. 1-5, claims	1-8, 14-16, 20-23, 27-36, 41	
X	US 2006/0289055 A1 (FERRO CORPORATION) 28.12.2006, [0015]-[0017], [0028]-[0032], tabl. 1-5, claims	1-8, 14, 20-23, 27-37, 41	
X	RU 2303831 C2 (OTKRYTOE AKTSIONERNOE OBSHESTVO "ZAVOD ELEKTRONNYKH MATERIALOV I PRIBOROV "ANALOG") 27.07.2007	1, 5, 20-22, 26-28, 32-33	
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		<input type="checkbox"/> See patent family annex.	
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/0239331 A1 (PALO ALTO RESEARCH CENTER INCORPORATED) 24.09.2009, [0023], [0024], [0048], claims 1-3	35, 39
Y		40