

Title (en)  
FABRICATION OF STACKED PEROVSKITE STRUCTURES

Title (de)  
HERSTELLUNG VON GESTAPELTEN PEROWSKITSTRUKTUREN

Title (fr)  
FABRICATION DE STRUCTURES EN PÉROVSKITE EMPILÉES

Publication  
**EP 3682489 A4 20211020 (EN)**

Application  
**EP 18866448 A 20180914**

Priority  
• US 201762559407 P 20170915  
• US 2018051245 W 20180914

Abstract (en)  
[origin: WO2019074616A2] Techniques are described for forming a semiconductor device by fusing a first PVSK layer on a first portion of the device with a second PVSK layer on a second portion of the device. The portions are stacked together so that the PVSK layers face each other. The PVSK layers can be fused by applying heat or light, together with pressure. The fusing can include adding a solvent or a first PVSK component. The first PVSK component can be a material that lowers a melting temperature of the PVSK in the PVSK layers to assist in recrystallization of the PVSK. The first PVSK component can be combined with a second PVSK component to form additional PVSK. The PVSK components can be added after the PVSK layers are formed or additives within the PVSK layers. PVSK layers can also be fused without adding any components or solvents.

IPC 8 full level  
**H01L 51/00** (2006.01); **H01L 51/42** (2006.01); **H01L 51/44** (2006.01)

CPC (source: EP)  
**H01L 31/00** (2013.01); **H10K 71/50** (2023.02); **H10K 85/50** (2023.02); **H10K 30/50** (2023.02); **H10K 71/40** (2023.02); **Y02E 10/549** (2013.01)

Citation (search report)  
• [XYI] WO 2016111576 A1 20160714 - KOREA RES INST CHEM TECH [KR]  
• [A] KR 101707050 B1 20170217 - DAEGU GYEONGBUK INST SCIENCE & TECH [KR]  
• [A] JP 2014056962 A 20140327 - PECCELL TECHNOLOGIES INC  
• [YA] LI TIANYANG ET AL: "Melt Processing of Hybrid Organic-Inorganic Lead Iodide Layered Perovskites", CHEMISTRY OF MATERIALS, vol. 29, no. 15, 18 July 2017 (2017-07-18), US, pages 6200 - 6204, XP055839040, ISSN: 0897-4756, DOI: 10.1021/acs.chemmater.7b02363  
• [Y] SPYROPOULOS GEORGE D. ET AL: "Organic and perovskite solar modules innovated by adhesive top electrode and depth-resolved laser patterning", ENERGY & ENVIRONMENTAL SCIENCE, vol. 9, no. 7, 1 January 2016 (2016-01-01), Cambridge, pages 2302 - 2313, XP055839043, ISSN: 1754-5692, DOI: 10.1039/C6EE01555G  
• [Y] LIYAN YANG ET AL: "Recent progress and challenges of organometal halide perovskite solar cells", REPORTS ON PROGRESS IN PHYSICS, INSTITUTE OF PHYSICS PUBLISHING, BRISTOL, GB, vol. 79, no. 2, 29 January 2016 (2016-01-29), pages 26501, XP020297109, ISSN: 0034-4885, [retrieved on 20160129], DOI: 10.1088/0034-4885/79/2/026501

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