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## SUPPORTING INFORMATION

## 3D-printing Ag-line of front-electrodes with optimized size and interface to enhance performance of Si solar cells

Yi Jiang, a Yibo Chen, a Mingjian Zhang, a Yang Qiu, a Yuan Lin\*a,b and Feng Pan\*a

School of Advanced Materials, Peking University, Peking University Shenzhen Graduate School, Shenzhen 518055, China. Tel: 86-755-26033200; E-mail: panfeng@pkusz.edu.cn, linyuan@iccas.ac.cn.

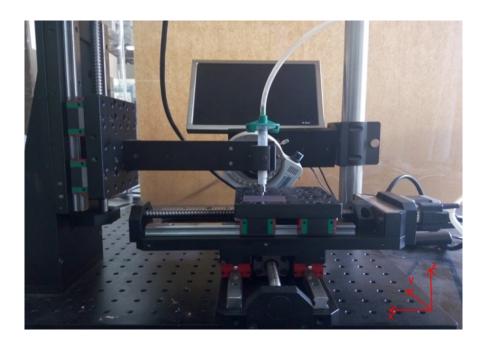


Figure S1 A brief overview of the self-designed 3D printing equipment.

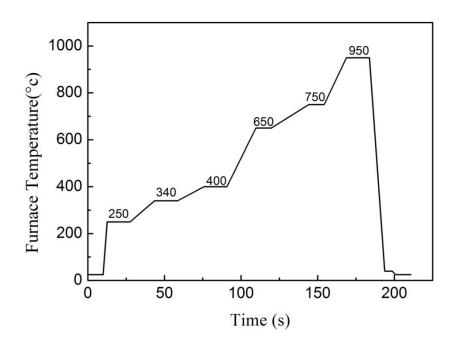


Figure S2 The temperature profile of co-sintered.

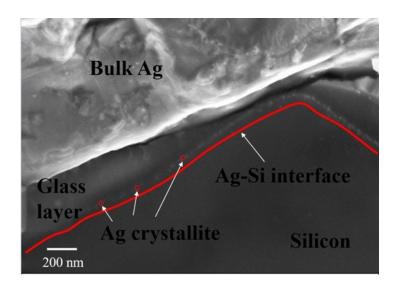


Figure S3 The SEM image of Ag/Si interface of Si solar cell with LWs (40  $\mu m)$  and PCE (15.26%)