Design Considerations for the Bottom Cell in Perovskite / Silicon Tandems: A Terawatt Scalability Perspective

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Electronic supplementary information

Table S1 summarises cell and wafer information used to generate Figures 7 and 9. The reader is invited to explore an interactive data application available at https://pvdata.csiro.au.

Author	Cell technology	Wafer doping	Wafer type	Conversion efficiency [%]	Reference
Albrecht et al.	SHJ	n-type	FZ	16.1	[1]
Werner et al.	homojunction	n-type	FZ	17.2	[2]
Bush et al.	SHJ	n-type	FZ	23.6	[3]
Sahli et al.	SHJ	n-type	FZ	22.7	[4]
Sahli et al.	SHJ	n-type	FZ	21.7	[4]
Sahli et al.	SHJ	n-type	FZ	16.8	[4]
Wu et al.	homojunction	n-type	FZ	22.8	[5]
Fan et al.	SHJ	Not clear	Not clear	18.56	[6]
Werner et al.	SHJ	n-type	FZ	17.2	[7]
Werner et al.	SHJ	n-type	FZ	19.5	[7]
Werner et al.	SHJ	n-type	FZ	18.1	[7]
Werner et al.	SHJ	n-type	FZ	21.4	[7]
Sahli et al.	SHJ	n-type	FZ	24.09	[8]
Zheng et al.	homojunction	n-type	FZ	19.1	[9]

Zheng et al.	homojunction	n-type	FZ	15.6	[9]
Hoye et al.	homojunction	p-type	Not clear	16.2	[10]
Zhu et al.	SHJ	n-type	FZ	23.73	[11]
Jost et al.	SHJ	n-type	FZ	23.1	[12]
Jost et al.	SHJ	n-type	FZ	25.4	[12]
Hou et al.	SHJ	n-type	FZ	21.23	[13]
Shen et al.	POLO/TOPCon	n-type	FZ	24	[14]
Zhu et al.	SHJ	n-type	Not clear	16.86	[15]
Zhu et al.	SHJ	n-type	Not clear	18.42	[15]
Hou et al.	SHJ	n-type	FZ	20.79	[16]
Chen et al.	SHJ	n-type	FZ	25.4	[17]
Mazzarella et al.	SHJ	n-type	FZ	25.34	[18]
Nogay et al.	POLO/TOPCon	p-type	FZ	24.92	[19]
Kim et al.	homojunction	p-type	Cz	21.02	[20]
Kohnen et al.	SHJ	n-type	FZ	24.95	[21]
Kohnen et al.	SHJ	n-type	FZ	26.02	[21]
Bett et al.	SHJ	n-type	FZ	21.1	[22]
Bett et al.	SHJ	n-type	FZ	19.4	[22]
Chen et al.	SHJ	n-type	Not clear	26	[23]
Xu et al.	SHJ	n-type	FZ	26.94	[24]
Hou et al.	SHJ	n-type	FZ	25.58	[25]
Kim et al.	SHJ	n-type	FZ	26.7	[26]
Schulze et al.	SHJ	p-type	FZ	23.3	[27]
Subbiah et al.	SHJ	n-type	FZ	23.8	[28]
Aydin et al.	SHJ	n-type	FZ	24.6	[29]
Al-Ashouri et al.	SHJ	n-type	FZ	29	[30]
De Bastiani et al.	SHJ	n-type	FZ	25.1	[31]
Sutter et al.	SHJ	n-type	Not clear	26.1	[32]
Mariotti et al.	POLO/TOPCon	p-type	Cz	21.29	[33]
Mariotti et al.	POLO/TOPCon	p-type	Cz	21.34	[22]
Kohnen et al.	SHJ	n-type	Cz	27.89	[34]
Kohnen et al.	SHJ	n-type	FZ	27.96	[34]
Wu et al.	POLO/TOPCon	n-type	Cz	27.45	[35]
Sveinbjörnsson et al.	homojunction/POLO	Not clear	Not clear	28.08	[36]
Mao et al.	SHJ	n-type	Cz	28.34	[37]
Wang et al.	SHJ	n-type	FZ	26.01	[38]

Yang et al.	SHJ	n-type	Cz	28.52	[39]
Luo et al.	SHJ	n-type	Cz	28.6	[40]
Kamino et al.	SHJ	n-type	FZ	24.5	[41]
De Bastiani et al.	SHJ	n-type	FZ	27.8	[42]
Harter et al.	SHJ	n-type	Cz	28.4	[43]
Harter et al.	SHJ	n-type	FZ	27.11	[43]
Harter et al.	SHJ	n-type	FZ	27.11	[43]
Tockhorn et al.	SHJ	n-type	FZ	29.75	[44]
Tockhorn et al.	SHJ	n-type	FZ	29.54	[44]
Tockhorn et al.	SHJ	n-type	FZ	29.83	[44]
EPFL/CSEM	SHJ	Not clear	Not clear	31.3	[45]
Zheng et al.	SHJ	n-type	FZ	26.4	[46]
Zheng et al.	SHJ	n-type	FZ	23.7	[46]
Zheng et al.	SHJ	n-type	FZ	19.5	[46]

Table S1: Summary of silicon bottom cell technology, wafer type and wafer doping reported in the literature.

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