

8th Workshop on Metallization & Interconnection for c-Si solar Cells (MIW 2019)

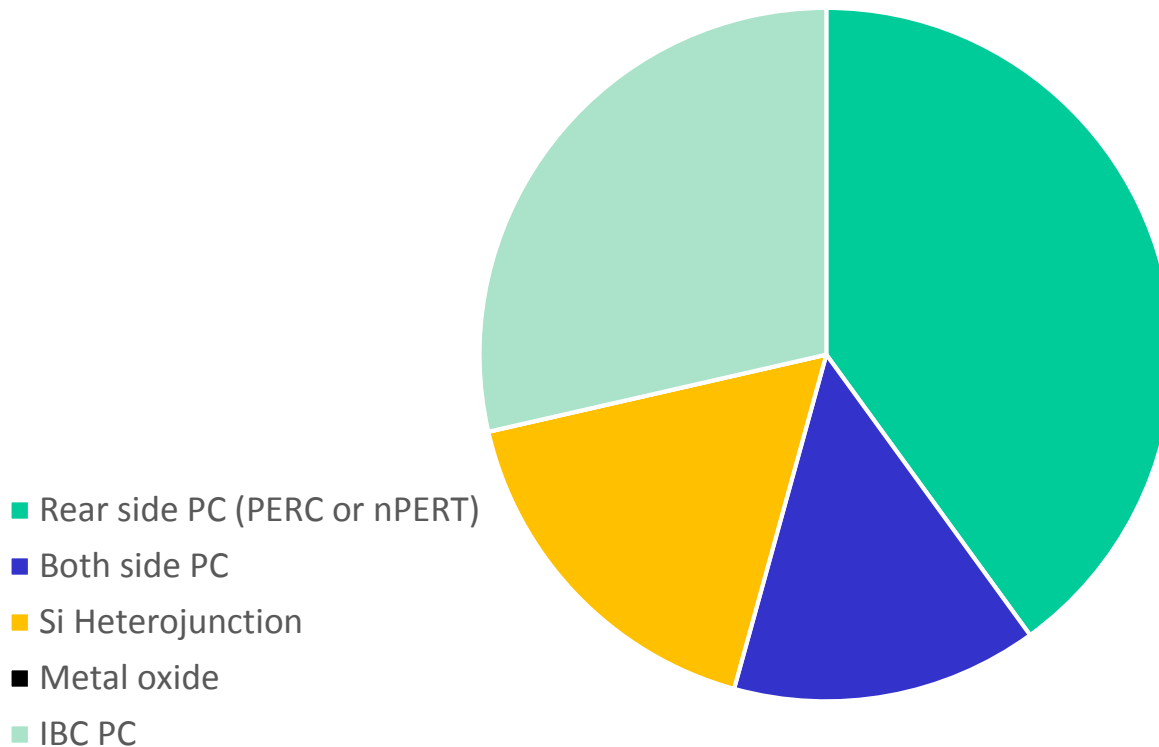
What's next after PERC? PERC with passivating contacts, nPERT with passivating contacts, or n-type heterojunction?

- **Rear side passivating contact** on PERC or nPERT is the next mainstream PV technology → incremental innovation: use same tools than PERC
- **IBC-PC**: + closer to industrialization than both sides contacted PC
 - Difficulties for interconnection
 - No production tool for patterning
- **Both sides PC**: complexity of production
- **n-type Si Heterojunction**: + High eff, + High Voc, + few steps
 - Disruptive innovation, - high CAPEX,
 - metallization and interconnection
- **Metal oxide passivation**: no future (stability issue)

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After PERC? (vote)



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One passivating contact = 14	Advantage (+)	Challenge (-)	Share
PERC back pass cont	- -	-Limited Voc -	
PERC all pass cont (time frame of 10 years)	- 725mV - Only PECVD with FT layer	- -	
nPERT nack pass cont	- Already shown in pilot prod - Similar equipment than PERC - Selective emitter keep ok Voc, ok Jsc	- -	
nPERT all pass cont	- -	- -	
Poly-IBC	- Closer to production compare to both side passivating contact - Good for residential (high eff,	- Bafacial - Interconnection issue, too different to standard - Ion implementation - No production technology for patterning	
n-type Heterojunction (10 years 20% share)	- High Voc - High eff. - Few steps	- High CAPEX - Metallization + interco - Disruptive techno	
Tandem (<1% in 10 years)			
J0 divide by two each ½ year			