Topic 3: Passivated contacts from R&D to production

Statement: ‘There is no way of making ‘passivated’ contacts with industry-compatible techniques without destroying the passivation.’

Counter-statement: ‘It is just a question of time and focused development before all contacts will be passivated contacts in solar cell manufacturing.’

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Participants:
• R&D institutes (EPFL, CSEM, ISC, ISFH, NREL, IPVF)
• Industry (Müller&Mayer, Starsource Technology)
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- Passivated contact if iVoc≈Voc but if low cost Jo,met ~<100 fA/cm² can be still accepted
- HIT (low temp: new line needed) vs polySi (high temp: fitting the mainstream industry)

- HJT already in production:
  - example: yesterday announcement of 200MW HJT lines sold in Europe

- PASSIVATED CONTACS: **IT WILL HAPPEN**, most votes for 5-10 years
- PROPER PASTE WILL BE THE KEY ENABLER (lots of votes)
  - e.g. n-PERT + polySi already 22% in industry and if paste is improved 23%
  - paste just need to (open SiNx and) contact top of thin highly doped polySi
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- First implementation as the rear passivating contact, then IBC
- Poly IBC more easy to pattern than HIT-IBC
- Front usage far away, as needs transparent layers (or HIT)

- Industry searches for the line update and polySi can be suitable! Given acceptable costs
- P-polySi with B doping on texture not so good Jo,pass. Needs more work.
- Patent should not block the polySi development as was the case for Sanyo HIT
- polySi depo method: PECVD or LPCVD has both pros and cons but both can be used
- If metal lines becomes 20um in industry and are <1% then Jo,m contribution will be negligible and Jopass can be very good with diffused junctions