

第五届 **PERC+** 与 **TOPCon** 技术论坛

5th **PERC+** and **TOPCon** Forum

2019

8.8 杭州 Hangzhou

主办
Organizer



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8月8日

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会议背景

钝化发射极和背面（PERC）技术已经成为太阳能电池新一代的常规技术，2019 年全球 PERC 电池产能将超过 100GW。通过集成选择性发射极（SE）技术、先进浆料与金属化工艺等，2019 年 PERC 电池量产效率已经达到 22.5% 以上。为了实现更低的生产成本，制绒与背面抛光工艺、背钝化工艺、激光工艺、导电浆料与金属化工艺的供应商们持续改进技术和设备，以提升设备生产能力和在线率，并降低物料和能量消耗。

与此同时，选择性发射极、多主栅和隧穿氧化层钝化接触（TOPCon）等技术也正在被引入标准 PERC 电池工艺，通过应用钝化接触技术，晶科于 2018 年实现创当时纪录的 23.95% 效率 PERC 电池。目前先进 P 型 PERC 电池最高效率已经提升到以前难以想象的 24% 以上。双面 PERC 电池在几乎不增加成本的情况下实现双面发电，在系统端实现 10%-25% 的发电增益，极大地增强了 PERC 技术的竞争力与未来发展潜力。

对于 N 型电池，TOPCon 技术通过电池背面的隧穿氧化层和掺杂多晶硅层实现整面的背钝化，而且多子可以穿透两层钝化层，无需开孔，避免了开孔处硅材料损伤和金属接触区域的复合。钝化接触技术也被认为是 PERC 电池极具潜力的发展方向，梅耶博格（Meyer Burger）开发了升级现有 PERC 产线的技术方案，可使 PERC 电池量产效率提升至 23% 以上。

第五届 **PERC+** 与 **TOPCon** 技术论坛将于 2019 年 8 月 8 日在杭州召开。会议将探讨全球与中国光伏行业展望与双面 PERC 市场份额，先进 PERC 技术的持续优化——SE 技术、多主栅技术、制绒与背面抛光工艺、背钝化工艺、激光工艺、导电浆料与金属化工艺，24% 以上效率 PERC 电池展望，单晶与多晶 PERC 电池 LID 和 LeTID 机理与解决方案，TOPCon 技术在 PERC 电池的应用前景，PERC 产线升级钝化接触技术的工艺方案等。

日程安排

2019 年 8 月 7 日 周三

16:00~21:00 会前注册

2019 年 8 月 8 日 周四

08:30~12:30 演讲报告

12:30~14:00 自助午餐与交流

14:00~18:30 演讲报告

18:30~20:00 招待晚宴



会议主题

- 全球与中国光伏行业展望与双面 PERC 市场份额
- 先进 PERC 电池展望——如何实现 24% 以上的转换效率？
- PERC 电池制绒与背面抛光工艺
- PERC 背钝化技术（PECVD 与 ALD）的性能提升
- 铸锭单晶 PERC 技术优势及挑战
- 导电浆料与金属化工艺创新助力 PERC 技术升级
- 用于 PERC 背膜开孔的先进激光设备
- 激光掺杂选择性发射极技术（LDSE）在 PERC 电池的应用
- 单晶与多晶 PERC 电池 LID 和 LeTID 机理与解决方案
- 双面 PERC 电池测试标准与背面发电优化技术
- 双面 PERC 电池组件实际发电优势分析
- 400W+ 时代的先进 PERC 电池与组件技术
- PERC 电池生产线优化与智能制造
- TOPCon 技术在 PERC 电池的应用前景
- PERC 产线升级钝化接触技术的工艺方案
- N 型 TOPCon 技术及应用前景

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Background

Passivated emitter and rear cell (PERC) has become a new generation of conventional technology for solar cells. In 2019, global PERC cell capacity will exceed 100GW. PERC mass production efficiency in 2019 has reached more than 22.5% with selective emitter (SE) technology, advanced paste and metallization process. In order to achieve lower production costs, suppliers of texturing and rear polishing, rear passivation, laser, pastes and metallization process suppliers continue to improve technology and equipment, to increase equipment throughput and uptime, and reduce material and energy consumption.

At the same time, SE, MBB, and Tunnel Oxide Passivated Contact (TOPCon) are also being introduced into standard PERC cell process. By applying passivated contact technology, Jinko achieved PERC cell efficiency record with 23.95% in 2018. At present, the highest efficiency of PERC cell has been raised to more than 24%. Bifacial PERC achieves double-sided power generation with no increase in cost and 10%-25% power generation gain at the system end, greatly enhancing the competitiveness and future development potential of PERC technology.

For N-type cell, TOPCon technology achieves back surface field passivation through tunnel oxide and doped poly-Si layer without laser opening, avoiding silicon material damage at the opening and recombination of metal contact areas. TOPCon technology is also considered to be a potential development trend for PERC cell. Meyer Burger has developed passivated contact technical solution to upgrade existing PERC line, which will increase PERC mass production efficiency to over 23%.

5th PERC+ and TOPCon Forum 2019 will be held on 8 August, 2019 in Hangzhou, China. The conference will discuss global and China PV industry outlook and bifacial PERC market share, continuous optimization of PERC technology - SE, MBB, texturing and rear side polishing, back passivation, laser, paste and metallization processes, more than 24% efficiency PERC cell prospects, mono and multi PERC LID and LeTID mechanism and solutions, TOPCon technology application prospects on PERC, PERC upgrades to TOPCon process plan, etc.

Preliminary Agenda

August. 7. 2019	Wednesday
16:00~21:00	Pre-conference Registration
August. 8. 2019	Thursday
09:00~12:30	Speech
12:30~14:00	Networking Lunch
14:00~18:30	Speech
18:30~20:00	Banquet

English-Chinese Translation will be Provided

Topics

- Global and China PV industry outlook and bifacial PERC market share
- Advanced PERC cell outlook - how to achieve above 24% conversion efficiency?
- PERC cell texturing and rear side polishing process
- Performance improvement of PERC PECVD and ALD rear passivation technology
- Mono-like PERC technology advantages and challenges
- Paste and metallization process innovations help PERC technology upgrade
- Advanced laser opening equipment for PERC passivation layer
- Laser Doped Selective Emitter Technology (LDSE) Application in PERC cell
- Mono and multi PERC LID and LeTID mechanism and solutions
- Bifacial PERC test standards and rear side generation optimization
- Bifacial PERC module real power generation advantage analysis
- Advanced PERC cell and module technology in 400W+ era
- PERC production line optimization and intelligent manufacturing
- TOPCon technology application prospects on PERC
- PERC upgrades to TOPCon process plan
- N-type TOPCon technology and application prospects