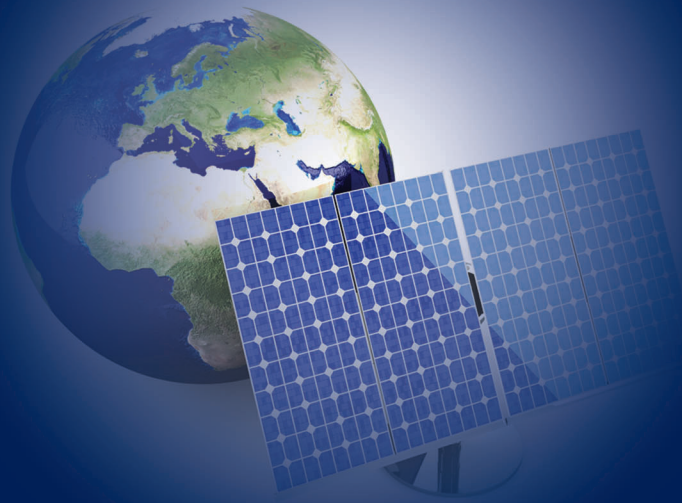
第三届叠瓦、拼片、双面、半片与多主栅组件论坛

3rd Shingled, Paving, Bifacial, Halfcut & MBB Modules Forum



7.2-3 常州 Changzhou | 2019

主办 Organizer 咨询化亚 ASIACHEM®

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会 议 背 景

2019 年，平价上网项目已成为中国光伏行业发展的着力点，以技术进步为核心降低度电成本刻不容缓。以叠瓦组件、拼片组件、双面组件、半片电池组件和多主栅组件等为代表的先进组件技术，正与高效电池技术一起，为提升光伏系统可靠性与发电效率，降低度电成本做出贡献。

叠瓦是高功率组件技术路线的重要发展方向，东方环晟、隆基、阿特斯、通威等均有 GW 级布局。叠瓦组件将成品电池片切成数片后用导电胶连接，消除片间距，在相同的封装面积下放置更多电池片，可降低电阻损耗和热斑效应，组件功率提升 10%以上。异质结电池与叠瓦技术更具组合优势。降低制造成本、提升技术成熟度及消除专利疑虑是叠瓦技术面临的挑战。与此同时，新兴的拼片组件技术可以降低电池片间距，提升组件功率和效率，正在引起行业重视。

双面组件通过背面采用透明材料(玻璃或透明背板)封装而成，搭配 PERC、HJT 或 N 型双面电池及跟踪支架，系统端可实现 5%-30%的发电增益。目前双玻双面组件技术已日臻成熟，透明背板在双面组件的应用也在得到重视。随着双面组件背面测试标准的完善，以及下游电站企业对双面发电价值的认可，双面组件将是组件技术发展的必然方向。

半片组件通过将标准电池对切后串联而得，可降低功率损耗，组件功率比同版型的常规组件高 5-10 瓦，是最易于实现大规模量产和具备高性价比的高效组件技术。半片技术正在成为高效组件的标配，2019 年将与常规组件并存，成为市场主流产品。

多主栅技术可以降低遮光面积并减少电阻损耗，提升组件功率输出，并通过降低银浆用量控制成本。多主栅电池测试分选及组件串焊工艺是多主栅组件实现产业化的关键。半片叠加多主栅技术，可将组件功率提升 12-15 瓦，已成为高功率组件技术路线重要发展方向。

第三届叠瓦、拼片、双面、半片与多主栅组件论坛将于 2019 年 7 月 2-3 日召开。会议将探讨全球与中国光伏市场展望与组件技术发展趋势，叠瓦、拼片、双面、半片与多主栅组件技术优势与投资回报，叠瓦组件用导电胶技术，光伏组件智能制造示范经验，叠瓦、拼片、双面、半片与多主栅组件关键设备、封装材料与工业化生产良率提升，双面组件测试标准与测试设备，以及其他提升组件功率的先进技术等。

日 程 安 排

2019 年 7 月 1 日　周一

16:00~21:00　会前注册

2019 年 7 月 2 日　周二

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

2019 年 7 月 3 日　周三

08:30~12:30　演讲报告

12:30~14:00　自助午餐与交流

14:00~18:30　商务参观

会 议 主 题

- 全球与中国光伏市场展望与组件技术发展趋势
- 400W+时代的高功率组件量产技术路线
- 叠瓦、拼片、双面、半片与多主栅组件技术优势与投资回报
- 叠瓦组件产能扩张前景与专利问题探讨
- 叠瓦组件用导电胶技术与电池联接可靠性分析
- 生产叠瓦与拼片组件的先进装备与封装技术
- 拼片组件技术量产解决方案与经济性分析
- 异质结电池与叠瓦技术的组合优势
- 叠瓦与半片电池用高效无损激光划片技术
- 双玻与透明背板双面组件制造工艺及封装材料
- 双面组件测试标准与测试设备
- 半片组件与大尺寸硅片和双面发电的组合优势
- 多主栅组件电池金属化工艺及焊接性能提升
- 服务于半片多主栅组件量产的先进串焊设备
- 其他提升组件功率的先进技术与封装材料
- 光伏组件智能制造与自动化装备

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Background

In 2019, the grid parity project has become the focus of China's photovoltaic industry. It is imperative to reduce the Levelized Cost of Electricity (LCOE) by taking technological progress. Advanced module technologies represented by shingled, paving, bifacial, halfcut and multi-busbar (MBB) modules, are working together with high-efficiency solar cell technology to increase PV system reliability and power generation efficiency and reduce LCOE.

Shingled module is an important development direction of high power module technology routes. DZS Solar, Longi, CSI, Tongwei, etc. have GW-level layout. Shingled module consisting of solar cells bonded by electrically conductive adhesive (ECA) to each other in a shingled manner, more cells can be placed in the same area compared to regular modules. It can reduce the resistance loss and hot spot effect, and the module power is increased by more than 10%. Heterojunction (HJT) solar cells and shingled technology have a combined advantage. Reducing manufacturing costs, increasing technology maturity and eliminating patent concerns are challenges for shingled technology. Meanwhile, the emerging paving module technology can reduce the cell spacing, improve module power and efficiency, and is attracting industry attention.

Bifacial module is encapsulated in a transparent material (glass or transparent backsheet) on the back. With PERC, HJT or N-type bifacial cells and tracking brackets, PV system can achieve 5%-30% power generation gain. At present, double-glass bifacial module technology has become more and more mature, and the application of transparent backsheet in the bifacial module is also received attention. With the perfection of bifacial module test standards, and recognition of bifacial power generation value, bifacial module will be the inevitable direction for module technology development.

Halfcut module connects the half-cut standard cells in series, which reduces power loss, so that the module power is 5-10W higher than the same version conventional module. Halfcut module is the easiest mass production and cost-effective high efficiency module technology. Half-cut technology is becoming standard for high-efficiency modules. In 2019, it will coexist with conventional modules and become the mainstream product in the market.

MBB technology can reduce the shading area and resistance loss, improve module power output, and control the cost by reducing the amount of silver paste. MBB cell test sorting and module string welding process are the key to MBB module industrialization. The half-cut combined MBB technology can increase module power by 12-15W, which has become an important development direction of high-power module technology route.

3rd Shingled, Paving, Bifacial, Halfcut & MBB Modules Forum 2019 will be held on 2-3 July. The upcoming conference will discuss global and China's PV market outlook and module technology trends, technical advantages and investment returns of shingled, paving, bifacial, halfcut & MBB modules, ECA technology for shingled module, PV module intelligent manufacturing demonstration experience, shingled, paving, bifacial, Halfcut & MBB module key equipments, encapsulation materials and industrial production yield increase, bifacial module test standards and test equipment, other advanced technologies to increase module power, etc.

Preliminary Agenda

July. 1. 2019	**Monday**
16:00~21:00	Pre-conference Registration
July. 2. 2019	**Tuesday**
09:00~12:30	Speech
12:30~14:00	Networking Lunch
14:00~18:30	Speech
18:30~20:00	Banquet
July. 3. 2019	**Wednesday**
09:00~12:30	Speech
12:30~14:00	Networking Lunch
14:00~18:30	Onsite visit

Topics

- Global and China's PV market outlook and module technology trends
- High-power module mass production technology route in 400W+ era
- Technical advantages and investment returns of shingled, paving, bifacial, halfcut & MBB modules
- Shingled module capacity expansion prospects and patent issues discussion
- Shingled module ECA technology and reliability analysis
- Advanced equipment and encapsulation technology for shingled and paving modules
- Paving module technology production solution and economic analysis
- Combination advantages of HJT cells and shingled technology
- High efficiency non-destructive laser scribing technology for shingled and half-cut cells
- Double glass and transparent backsheet bifacial modules manufacturing process and encapsulation materials
- Bifacial module test standards and test equipments
- Combination advantages of halfcut modules with large-size silicon wafers and bifacial power generation
- MBB module metallization and string welding performance improvement
- Advanced string welding equipment for half-cut MBB module mass production
- Other advanced technologies and encapsulation materials for module power improvement
- PV module intelligent manufacturing and automation equipments

English-Chinese Translation will be Provided