赛晶科技
SUN.KING TECH

股票代码 0580.HK

赛晶科技集团有限公司
SUN.KING TECHNOLOGY
GROUP LIMITED

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GROUP LIMITED







赛晶科技微信公众号

赛晶科技官网

赛晶科技集团有限公司

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以科技创新 推动绿色能源发展

董事长致辞

CHIEFBOARD SEND WORDS

以科技创新，推动绿色能源发展

从中国首台自主技术阳极饱和电抗器、柔直用直流支撑电容器，到世界前沿水平的固态开关、阻抗测量，赛晶科技的名字，始终与科技创新联系在一起。在过去的 20 年里，我们始终坚持以技术创新作为企业发展的第一驱动力，打造了一支具有国际领先水平的研发团队，和一系列行业前沿的创新技术和产品，见证和支持了中国电力能源技术的高速发展。

今天，中国广袤大地上的一座座高耸的风电机组、一排排整齐的光伏电板，跨越千山万水的一条条特高压输电线路，穿梭于大街小巷的一辆辆电动汽车，都有赛晶科技产品的身影。

创新没有止境。面向门槛高、难度大、国外遥遥领先的高端 IGBT 领域，我们依托深厚行业经验和积累，组建国际顶级专家团队，开启了国内稀缺的高端 IGBT、SiC 芯片及模块自主研发。目前，我们不仅量产了超越国际主流同类水平的 i20 IGBT 芯片组和 ED 封装 IGBT 模块，并且开始了微沟槽 IGBT 芯片和 HEEV 封装 SiC 模块等多款前沿技术的研发。我们将不懈努力，以卓越的国产创新技术，服务于风电、光伏、直流输电、电动汽车、储能等新能源全产业链发展，助力国家战略性新兴产业腾飞。

感谢！

董事长 项颉

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集团介绍

GROUP INTRODUCTION

赛晶科技集团有限公司（简称“赛晶科技”），是业内技术领先并深具影响力的电力电子器件供应商和系统集成商。赛晶科技成立于 2002 年，2010 年在香港主板上市（股票代码 0580.HK）。至今，赛晶科技已经发展为员工总数近1000人，年销售额超 10 亿元，在北京、浙江嘉善和宁波、江苏无锡、湖北武汉以及欧洲的瑞士、德国和荷兰，拥有十余家子公司的集团公司。

我们坚持“以科技创新作为企业发展的第一驱动力”的经营理念，专注于两大高端技术领域：

功率半导体及配套器件技术：国内首个且唯一自主技术阳极饱和电抗器、国内首个柔直用直流支撑电容器、国内技术领先的层叠母排等；

电力系统创新技术：世界最先进的固态开关和脉冲电源、拥有国际发明专利的阻抗测量、国内技术领先的在线监测等。

我们在嘉善、无锡、武汉建立了三大国内研发中心，并在瑞士、德国建立了三大海外研发团队。我们拥有专项研发团队 10 个，包含技术研发人员超 200 人，占员总数比例超过三分之一。我们取得了九项国家级能源技术成果认证、二十余项省市级技术创新荣誉，以及超过三百项专利证书。我们的创新技术成果，在新能源发电、直流输电、智能电网、电动汽车、轨道交通、船舶、通信、科研，以及工业控制等电力系统的各个环节获得广泛应用。

赛晶科技，秉承“追求卓越、共赢未来”的经营理念和“以科技创新，推动绿色能源发展”的企业使命，以面向未来的创新技术，为新能源全产业链发展和新型电力系统构建做出贡献。

集团分布

GROUP DISTRIBUTION

瑞士 兰兹伯格

• Astrol Electronlc AG

成立于 1996 年，是欧洲知名的电力电子技术研发企业，拥有 20 年技术积累和世界最领先的固态开关、高功率脉冲技术。
主营产品：全固态直流断路器、固态交流开关、高功率脉冲电源

• SwissSEMTechnologies AG

成立于 2019 年，功率半导体器件技术研发中心，拥有世界顶级功的率半导体技术专家团队，专注于功率半导体芯片及模块研发。
主营产品：IGBT、FRD、SiC 等功率半导体芯片及模块

德国 汉堡

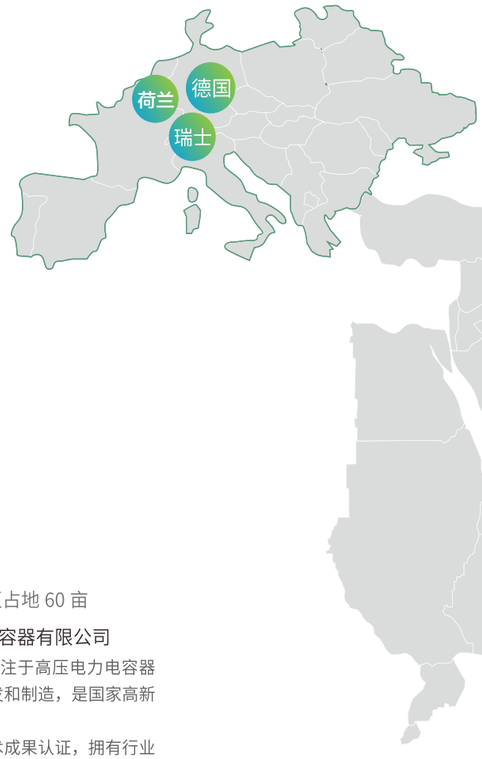
• morEnergyGmbH

成立于 2019 年，专注于电网和新能源领域的阻抗测量技术研发，拥有 1 名教授级、2 名博士级专家，发表学术论文 40 余篇，获得国际发明专利。
主营产品：在线式阻抗实时测量装置

荷兰 鹿特丹

• Astrolkwx B.V.

电力电子领域具有丰富的技术和市场经验，为船舶直流电气系统、轨道交通牵引变流系统等多个领域的客户提供技术咨询和解决方案。
主营产品：多种电力电子器件和装置，电力电子技术解决方案



江苏无锡 厂区占地 60 亩

• 无锡赛晶电力电容器有限公司

成立于 2008 年，专注于高压电力电容器及其成套装置的研发和制造，是国家高新技术企业。
获得国家级能源技术成果认证，拥有行业领先的全自动智能化制造生产线，设计产能居 1800 万 kvar/ 年。
主要产品：电力电容器

湖北武汉

• 武汉朗德电气有限公司

成立于 2007 年，专注于智能电网状态感知和评估领域的技术研发和制造，是国家高新技术企业。
主要产品：智能电网在线监测

浙江宁波

• 宁波海融电器有限公司

成立于2008年，专注于大功率电力电子电容器、感应炉电容器、机车电容器及电力电容器的研发、制造及销售。
主营产品：电力电子电容器

北京

• 赛晶科技集团有限公司 总部

浙江嘉善 厂区占地 151 亩

• 嘉善华瑞赛晶电气设备科技有限公司

成立于 2004 年，专注于阳极饱和电抗器技术研发和制造，是国家高新技术企业，获得国家级能源技术成果认证，是中国唯一自主技术阳极饱和电抗器供应商。
主营产品：阳极饱和电抗器

• 赛晶亚太半导体科技（浙江）有限公司

成立于 2020 年，专注于功率半导体器件研发和制造，是 SwissSEM 母公司，拥有国际顶级技术专家团队和业内经验丰富的管理团队，以及国际一流的全自动智能化制造生产线。
主营产品：IGBT、FRD、SiC 等功率半导体芯片，ED 封装、ST 封装、EVD 封装 IGBT 模块，及 HEEV 封装 SiC 模块等功率半导体模块

• 浙江赛英电力科技有限公司

成立于2011年，专注于层叠母排、集成母排技术研发和制造，拥有行业领先的设计实力与制造工艺，以及自动化制造生产线与检测线。
主营产品：层叠母排、集成母排

• 浙江嘉善科能电力设备有限公司

成立于 2011 年，专注于为各行业电能质量问题提供综合解决方案、灵活交流输电技术（FACTS）的研发和工程应用
主营产品：SVC、SVG等电能治理装置、全固态直流断路器、固态开关、高功率脉冲电源、在线式阻抗测量装置

• 赛晶新能源科技有限公司

集新能源开发、投资、建设、运维为一体的高科技企业，作为一站式清洁能源系统方案的提供商。
主营业务：新能源项目设计优化、EPC工程管理、AI智能运维服务系统解决方案等。

• 嘉善赛晶电容器有限公司

成立于 2017 年，专注于金属化聚丙烯薄膜直流支撑电容器及脉冲电容器的研发和制造，成功研发中国首个柔直用直流支撑电容器。
主营产品：直流支撑电容器、脉冲电容器

应用领域
APPLICATION AREA

新能源发电及储能

我们为风力发电、光伏发电等新能源发电行业及储能行业，提供自研IGBT、FRD、SiC芯片、IGBT模块及SiC模块，以及层叠母排、集成母排等多种产品。装载着赛晶品牌产品的众多风电变频器、光伏逆变器、储能变流器等变流设备，为国家低碳绿色能源战略提供了源源不断的清洁能源。

此外，我们的固态开关、电能质量治理装置、阻抗测量等产品，是新能源发电场安全、稳定、高效运行的关键设备。在中国和欧洲的风力发电、光伏发电、储能领域取得了众多出色业绩。

高压直流输电

我们为特高压直流输电、柔性直流输电等高压直流输电工程，提供阳极饱和电抗器、电力电容器、柔直用直流支撑电容器、层叠母排等多种关键产品。

我们已经为超过 40 个高压、特高压直流输电工程，提供超过 2 万台阳极饱和电抗器、超过 4 千万千乏电力电容器、数十个智能电网在线监测系统，以及中国首个自主研发并批量应用的柔直用直流支撑电容器。

智能电网

我们为电网智能化发展提供智能电网在线监测、在线式阻抗实时测量等多种、固态交 / 直流开关等多种创新产品。我们的产品，可实现对电力系统各个环节的智能、实时系统监控、风险诊断、故障报警，以及微妙级的快速关断或切换等功能。我们的产品，不仅在国内成功应用于数十个智能电网实验示范项目，还在多个欧洲智能电网和微电网科研示范项目中取得了出色表现。

电动汽车

我们为新能源汽车电驱系统，提供国际领先、国内稀缺的多种国产功率半导体产品，包括：自研 IGBT、FRD、SiC芯片，IGBT 模块及 SiC 模块，层叠母排等。

我们的产品，具有国际领先的技术水平和卓越品质，与多家国外内知名汽车企业开展合作，在多款乘用车、商用车上取得批量应用和良好表现。

轨道交通

我们为电力机车和动车组的电驱系统，提供大功率 IGBT 组件、层叠母排、电力电子电容器等多种产品，广泛应用于 7200KW、9600KW 等电力机车，CRH5 型、复兴号、动力集中型等动车组，以及城轨、地铁等城市轨道交通车辆中，是中国轨道交通车辆核心元器件的主要供应商之一。

此外，我们提供的电能质量治理装置、电气化铁道过分相智能开关、固态交 / 直流开关等产品，对保障了轨道交通供电系统运行安全，以及高速磁悬浮推进列车等新兴技术研发具有重要作用。

电气化船舶

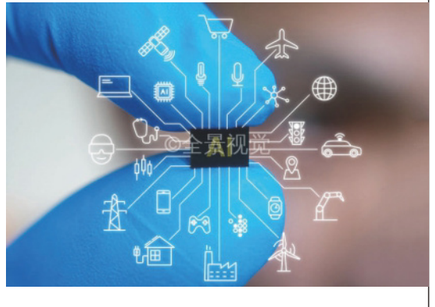
我们为船舶电力系统，提供世界范围内技术最领先的固态直流断路器及阻抗测量产品。我们是西门子船舶领域的战略供应商，并与多家船舶电力系统领域的国际和国内领军企业开展合作。中国居世界造船业的领先地位，船舶电气化技术具有巨大的发展潜力。我们将以国际领先的技术水平和产品品质，助力中国船舶产业在电气化领域再创新的辉煌。

工业控制与节能

我们为各类工业控制与节能行业，提供的自研 IGBT、FRD、SiC芯片及IGBT、SiC模块，层叠母排、电力电容器、电能质量治理装置，以及日立能源（原瑞士ABB）的高压 IGBT 模块等产品，是各类工业变流器、变频器的核心元器件。我们是中国工业领域电力电子器件的主要供应商之一，为中国工业领域电气化和低碳节能发展，做出了重要贡献。

前沿科研

我们为粒子物理、电力、核能等众多前沿科学研究，提供脉冲电源、固态开关、功率半导体等产品，参与了国内外多个大型粒子对撞机、可控核聚变、电力实验室等科学研究项目。我们愿与科学探索同行，助力人类前沿科技创新的伟大事业。

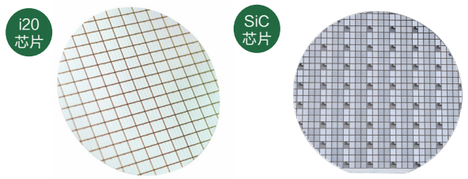


产品中心
PRODUCT CENTER

01 IGBT、SiC芯片
IGBT、SiC Chip

IGBT芯片和二极管芯片产品

赛晶以应用需求为基础，并以应用可靠性为目的，开发出了i20 IGBT 和d20二极管芯片组。其中，i20 IGBT芯片采用先进沟槽栅技术,d20二极管芯片采用先进软恢复技术。



02 IGBT、SiC模块
IGBT、SiC Module

ED封装模块产品

1200V和 1700VED封装模块采用赛晶自研IGBT和二极管芯片组，降低损耗，并提高1200V模块额定电流可达2×750A。采用市场主流封装并采用先进的封装工艺和优质的封装材料，以保证模块高可靠性和长寿命等性能。

03 阳极饱和电抗器
ANODE SATURABLE REACTORS

阳极饱和电抗器是高压直流输电换流阀中最重要的保护器件之一。用于防护高压浪涌及恶性天气环境对换流阀的损坏。赛晶科技通过多年的自主研发，于2009年成功实现高压直流输电用阳极饱和电抗器的国产化生产，并成为该产品在国内唯一的国产供应商,并于2010年4月获得国家能源局颁发的“国家级能源科学技术成果鉴定”证书。

04 电力电容器
POWER CAPACITORS

赛晶科技拥有国内首屈一指的电力电容器自动生产线，采用多台国内外最先进的自动化生产设备。产品获得ISO9001、ISO14001、OHSAS18001三大体系认证,获得经第三方权威机构检测通过的型式试验报告和特殊试验报告23份。是中国两大电网公司:国家电网、南方电网,电力电容器的长期供应商。

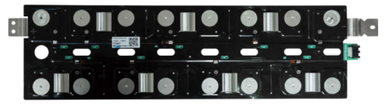
赛晶科技拥有电容器行业经验超过10年的技术和管理团队，通过稳固的国际化专业原材料供给、完善的产品设计、顶级的工艺工装、严格的质量控制，向客户提供外形美观、性能优异的产品。

05 电力电子电容器
POWER ELECTRONIC CAPACITORS

电力电子电容器,是以金属化薄膜为主要材料的电容器，具有体积小、损耗小、无极性、可靠性高、稳定性好、安全性强、耐大电流冲击能力强等优点，是各类电力电子系统换流设备的核心器件之一，在柔性直流输电、轨道交通、军工装备、工矿医疗、新能源等领域均有广泛的市场应用。

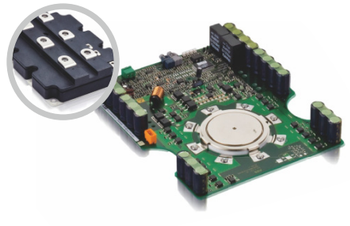
06 层叠母排、集成母排
LAMINATED BUSBARS、
CCS INTEGRATED BUSBAR

赛晶科技是拥有从事层叠母排、集成母排产品技术开发与生产服务的专业技术团队，作为国内领先供应商并出口国外客户，致力于为新能源汽车、光伏、风电、轨道交通、通讯、工业等行业领域提供系统的解决方案和优质的产品。通过引进国际先进的母线排自动化生产线与检测线，充分保证母排的生产效率与产品质量，获得ISO9001质量管理体系认证。



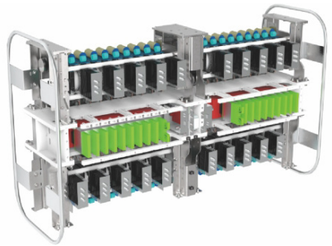
07 分销产品
DISTRIBUTION PRODUCTS

赛晶科技自2002年起从事电力电子元器件分销业务,凭借专业的销售团队及细致周到的售后服务,赛晶科技连续多年成为日立能源半导体(原ABB半导体)产品全球最大授权分销商。销售的进口电力电子部件用于输配电、电力机车、采矿化工、有色金属及钢铁冶炼等行业。与包括中国中车、国网智能电网研究院、西电集团、许继集团、南瑞集团、中电普瑞、合肥阳光、苏州汇川、特变电工、明阳电气、禾望电气等在内的众多行业领军企业保持长期良好合作。



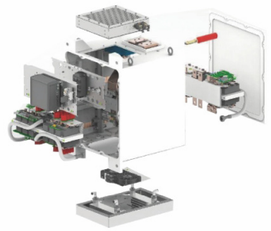
08 固态交流开关
AC BREAKER

赛晶科技的固态交流开关以其可以快速投切、电流自然过零关断、投入时刻精确可控及高寿命免维护等优势，在特定的应用中扮演着重要的角色。我们具有经过多个应用验证的电力电子交流开关的成熟技术平台，包括固态开关阀组的结构技术、高压阀组光纤控制技术、同步触发技术、具有丰富经验的散热分析好工程设计、可靠性设计等，为客户提供各种应用的高压大功率交流固态开关的定制。



09 全固态直流断路器
DC BREAKER

赛晶科技用高压大功率IGBT全控器件组成的全固态直流断路器将直流断路器的开断电流时间从机械开关的毫秒级缩短到了微秒级，其带来的进步是革命性的，将极大地抑制短路电流的峰值。



10 高功率脉冲
PULSED POWER

高功率脉冲技术是指在预定短时间内生成一个(多个)高能短脉冲，或连续生成一系列高能脉冲的应用。装置往往需要在短时间内处理大的电流和大的电压，致使应用中的电流上升率(di/dt)超出标准电力电子器件的数据范围。

赛晶在高功率脉冲技术应用领域有丰厚的技术积淀和工程实际经验，参与过的工程项目脉冲功率从几千焦到几百兆焦、电压从几千伏到数百千伏、脉冲电流峰值从几千安到数百千安，应用的电力电子器件有品闸管、iGCT和iGBT。在应用超出了标准器件的参数范围时，我们会使用一些经过厂商优化，产品手册中没有的定制型器件和配套定制型驱动器。

11 灵活交流输电技术产品
FLEXIBLE AC TRANSMISSION SYSTEMS

赛晶科技在灵活交流输电技术（FACTS）的研发及工程应用领域，拥有雄厚技术实力和丰富经验，以及大批专家技术团队。

赛晶科技在综合电能质量监测治理与节能方面，为客户提供优质电能质量供电工业园区建设综合解决方案，全面提高工业园区供电质量，保障电网安全;能够提供高、低压工业节能产品，为工业配电系统节能降耗发挥支撑作用;能够提供电能质量分析评估、监测、治理等全套技术解决方案，能极大地改善谐波、电压波动、闪变、负序等，大大降低网损，增加各类设备的供电安全可靠性,延长使用寿命。

12 智能电网在线监测
POWER GRID STATUS MONITORING

赛晶科技结合电力系统前沿学科方向，专注于国际领先的智能电网变电设备、输电设备、配电设备在线监测及设备状态诊断及故障定位等领域，研发出高新技术产品30余种。

目前拥有电力相关专利50余项，已授权专利45项，其中发明专利5项，申请软件著作权45项软件产品7项，权威检测报告70多份。并且深度参与了《高压电缆局部放电在线监测系统技术规范》、《高压电缆接地电流在线监测系统技术规范》等行业标准的制定。公司连续多年获得国家高新技术企业和双软企业，瞪羚企业，中国电器工业协会会员单位，武汉市守信用重合同企业等荣誉。

13 阻抗测量
IMPEDANCE MEASUREMENT TECHNOLOGY

赛晶科技拥有世界上最先进和最便捷的阻抗测量技术。赛晶的中低压领域的阻抗测量系列产品，在世界范围内的新能源发电、电气化交通、新能源汽车充电管理、电梯、智能电网等众多领域具有广泛需求。该技术历时7年研发，获得了德国汉堡赫尔穆特-施密特大学6百万欧元研究资助，已获得国际专利认证，并发表40余篇相关论文。。

赛晶科技
SUN.KING TECH

股票代码 0580.HK

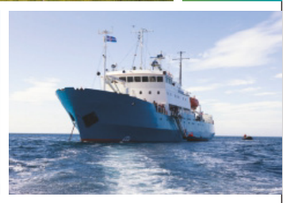
SUN.KING TECHNOLOGY GROUP LIMITED

SUN.KING TECHNOLOGY
GROUP LIMITED









Sun.King at WeChat

SwissSEM Website

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Message From Chairman

Promote Green Energy Development through Technology & Innovation

China's first self-developed anode saturable reactor (ASR) and flexible DC-link capacitor, world-class solid-state switch and impedance measurement...Sun.King Technology is consistently synonymous with technology and innovation. Over the past 20 years, we persisted in driving business development through technology and innovation, formed a world-leading R&D team, and rolled out a host of creative technologies and products at the forefront of the industry, as a witness of and contributor to China's takeoff in electric energy technology.

Rows of towering wind turbines and arrays of photovoltaic panels dotting around vast land of China, UHV power transmission lines spanning nationwide, and EVs weaving through China's streets and alleys have something in common—they all are embedded with products of Sun.King Technology.

Innovation never ends. IGBT is a sector of high threshold and great difficulty, where foreign enterprises have total supremacy. Based on years of practices in the sector, we set up a world-class expert team for research and development of premium IGBT,SiC chips and modules in response to domestic scarcity. We have now realized mass production of i20 IGBT chipsets and ED-type IGBT modules above international standards for leading products of the like, and commenced research and development of cutting-edge technologies, such as microgroove IGBT chip and HEEV-type SiC module. With unremitting effort, we will retain preeminence in domestic technology and innovation, and contribute to wind power, photovoltaic, DC power transmission, EV, energy storage and other new energy industry chain sectors, with a view to driving China's strategic emerging industries to take off.

Thank you!

Xiang Jie, Chairman

CONTENTS

About Us

Sun.King Technology Group Limited (hereinafter referred to as Sun.King Technology) is an industry-leading and influential power electronic device supplier and system integrator. Incorporated in 2002, Sun.King Technology went public on the HKEX Main Board (stock code: 0580.HK). Sun.King Technology now has developed to a total of nearly 1000 employees, with annual sales of over CNY 1 billion. We are a corporation composed of a dozen subsidiaries in Beijing, Jiashan, Ningbo, Zhejiang, Wuxi, Jiangsu, Wuhan, Hubei, as well as Switzerland,Germany, and the Netherlands in Europe.

Upholding the management philosophy "technology & innovation is primary driver to business development", we are specializing in two advanced technical fields:

Power semiconductor and relevant devices: the first and only self-developed anode saturable reactor (ASR) and first flexible DC-link capacitor and most advanced laminated busbar in China;

Cutting-edge power electronics: state-of-the-art solid-state switch and pulsed power supply, impedance measurement granted with international invention patent, and tech-leading online monitoring in China.

We have established three domestic R&D centers in Jiashan, Wuxi and Wuhan, and three overseas R&D teams in Switzerland and Germany. We boast 10 R&D teams of over 300 R&D professionals who represent more than 1/3 of the staff. We have obtained nine state-level energy tech achievement certifications, over twenty provincial or municipal tech & innovation accolades, and more than two hundred patents. Our outcomes of tech & innovation are in extensive use in new energy power generation, DC power transmission, smart grid, electric vehicle, rail transit, shipping, communication, scientific research, as well as industrial control and other facets of electric power systems.

Upholding the management philosophy of "pursuit of excellence and win-win future" and mission of "promoting green energy development through technology and innovation", Sun.King Technology is dedicated to development of new energy industry chain and construction of new electric power system, through future-oriented technology and innovation.

Business Landscape

Landsberg, Switzerland

• Astrol Electronic AG

Founded in 1996, Astrol Electronic AG is a well-established tech developer in EU power electronics, with 20 years of technical advances and world-leading solid-state switch and high-power pulsed switch.
Staple product: all-solid-state DC breaker, solid-state AC switch, high-power pulsed power supply

• SwissSEMTechnologies AG

Founded in 2019, SwissSEMTechnologies AG is a tech R&D center of power semiconductors and devices. Built on a world-class team of tech experts in power semiconductors, it is dedicated to research and development of power semiconductor chips and modules.
Staple product: power semiconductor chips such as IGBT, FRD and SiC, and modules

Hamburg, Germany

• morEnergyGmbH

Founded in 2019, morEnergyGmbH is specialized in impedance measurement technology and development in grid and new energy. With 1 professor-level and 2 doctoral experts, it has published around 40 academic papers and obtained a stream of international invention patents.
Staple product: online real-time impedance measurement device

Rotterdam, The Netherlands

• Astrolkwx B.V.

With rich experience in power electronics technology and marketing: offer technical advice and solutions to customers in fields of marine DC electric systems, rail transit traction & conversion systems, etc.
Staple products: all manner of power electronics devices, and relevant technical solutions

Wuxi, Jiangsu land area of 40,000 sqm

• Wuxi Sun.King Power Capacitor Co., Ltd.

Founded in 2008, Wuxi Sun.King Power Capacitor Co., Ltd. is specialized in R&D and manufacture of HV power capacitors and complete sets of devices. It is a national hi-tech enterprise.
Apart from state-level energy tech advance certifications, it boasts industry-leading assembly lines for automated and intelligent manufacturing with design capacity of 18 million kvar/year.
Staple product: power capacitor

Wuhan, Hubei

• Wuhan LandPower Co., Ltd.

Founded in 2008, Wuxi Wuhan LandPower Co., Ltd. is specialized in tech R&D and manufacturing in the field of smart grid status sensing and assessment. It is a national hi-tech enterprise.
Staple product: online smart grid monitoring

Zhejiang, Ningbo

• Ningbo Hailong Electric Co., Ltd.

manufacturing and sales of high-power power electronic capacitors, induction furnace capacitors, locomotive capacitors and power capacitors.
Staple product: Power Electronic Capacitors

Beijing

• Sun.King Technology Group Limited HQ

Jiashan, Zhejiang land area of 100,666 sqm

• Jiashan Sun.King Electrical Equipment & Technology Co., Ltd.

Founded in 2004, Jiashan Sun.King Electrical Equipment & Technology Co., Ltd. is specialized in anode saturable reactor (ASR) technology R&D and manufacturing. It is a national hi-tech enterprise, with state-level energy tech advance certifications. It is also the sole self-developed ASR supplier in China.
Staple product: anode saturable reactor (ASR)

• Sun.King NE Technology Co., Ltd

Which is a high-tech company integrating new energy development, investment, construction,operation and maintenance. As a one-stop provider of clean energy system solutions, its main business includes new energy project design and optimization, EPC engineering management, and AI operation and maintenance service system solutions, etc.

• Jiashan Sun.King Capacitor Co., Ltd.

Established in 2017, Jiashan Sun.King Capacitor Co., Ltd. is specialized in R&D and manufacture of MPPF DC-link capacitors and pulse capacitors. It has successfully developed China's first flexible DC-link capacitor.
Staple product: DC-link capacitor, pulse capacitor

• Zhejiang Sine Power Technology Co., Ltd.

Founded in 2011, Zhejiang Sine Power Technology Co., Ltd. is specialized in laminated busbar and CCS Integrated Busbar development and manufacturing. It boasts industry-leading design capacity and manufacturing technology, as well as assembly lines and detection lines for automated manufacturing.
Staple product: laminated busbar and CCS Integrated Busbar

• Zhejiang Jiashan Keneng Power Equipment Co., Ltd.

Founded in 2011, Zhejiang Jiashan Keneng Power Equipment Co., Ltd. is specialized in delivering integrated solutions to power quality problems in all sectors, along with R&D and engineering application of flexible AC transmission system (FACTS)
Staple product: all-solid-state DC breaker, solid-state AC switch, high-power pulsed power supply, online real-time impedance measurement device

• Sun.King Pacific Semiconductor Technology (Zhejiang) Co., Ltd.

Founded in 2020, Sun.King Asia-Pacific Semiconductor Technology (Zhejiang) Co., Ltd. is specialized in R&D and manufacture of power semiconductors and devices. It is the parent company of SwissSEM. It boasts a team of top experts in the world and management team with rich experience in the industry, as well as world-class assembly lines for automated and intelligent manufacturing.
Staple product: IGBT, FRD, SiC and other power semiconductor chips, ED-type, ST-type, EVD-type IGBT modules, and HEEV-type SiC modules and other power semiconductor modules

Range of Application

New energy power generation、Energy Storage

Targeting wind power generation, photovoltaic power generation ,Energy Storage and other sectors of new energy power generation, we provide a vast array of self-developed products, such as IGBT and SiC chips, IGBT and SiC modules, and laminated busbars,CCS Integrated busbar. A galaxy of Sun.King converter devices, e.g., wind power converters,photovoltaic inverters, or energy storage converters, secure constant supply of clean energy for fulfillment of national low-carbon and green energy strategy.
Additionally, our solid-state switch, power quality regulation device, impedance measurement and other products play a crucial part in ensuring safe, stable and efficient operation of new energy power plants. We have a proven track record of wind and photovoltaic power generation in China and EU.

HV DC power transmission

Our anode saturable reactor (ASR), power capacitor, flexible DC-link capacitor, laminated busbar and other products are of vital importance in UHV DC power transmission, flexible DC power transmission and other HV DC power transmission projects.
We have supplied over 20,000 ASRs, more than 40 million kvar power capacitors, and dozens of online smart grid monitoring systems for over 40 HV and UHV DC power transmission projects, and originated China's first self-developed and mass-used flexible DC-link capacitor.

Smart grid

Aimed at intelligent grid development, we have rolled out a heterogeneous collection of innovative products, such as online smart grid monitoring, online real-time impedance measurement, and solid-state AC/DC switch. Our products enable intelligent and real-time system monitoring, risk diagnosis, fault alarm and micro-second-level quick disconnection or switch in the power system. Our products not only work in dozens of smart grid experiment demonstration projects nationwide, but also hog the limelight in substantial numbers of EU smart grid and microgrid scientific research demonstration projects.

Electric vehicle

We arm NEV electric drive systems with various homemade power semiconductor products of preeminence in the world but of rarity in China, including self-developed IGBT, FRD,SiC chips, IGBT modules and SiC modules, laminated busbar.
Our products are aligned with world-leading technical standards and known for superb quality. In collaboration with famous national or international auto makers, our products have been part of a variety of mass-produced passenger vehicles and commercial vehicles.

Rail transit

For electric drive systems of electric locomotives and motor train sets, we provide high-power IGBT modules, laminated busbars, power electronic capacitors and other products. Our products are in extensive use in 7200KW, 9600KW and other electric locomotives, CRH5, Fuxing, centralized power EMU and other motor train sets, as well as urban rail, metro and other urban rail transit vehicles. We are one of prime suppliers of key components and elements to China's rail transit vehicles.
In addition, our power quality regulation device, intelligent switch for passing neutral section in electric railways, solid-state AC/DC switch and other products, have ensured safe operation of power supply systems for rail transit and propelled development of emerging technologies, like high-speed maglev train.

Electric shipping

We provide state-of-the-art solid-state DC breakers and impedance measurement products that work in ship power systems. We are a strategic shipping product supplier to Siemens, and have teamed up with many national or international ship power system leaders. China has total supremacy in the international shipbuilding industry, and ship electrification technology has colossal amount of potential. With world-leading technical standards and product quality, we pledge to play a part in making China's shipping industry scale new heights in electrification.

Industrial control and energy saving

For all sectors of industrial control and energy saving, our self-developed IGBT and SiC chips, IGBT and SiC modules, laminated busbars, power capacitors, power quality regulators, and Hitachi Energy (previously known as ABB) HV IGBT modules are core components and elements of various industrial converters and frequency converters. As one of prime suppliers of power electronic devices, we have made important contribution to electrification and low-carbon energy conservation in China's industry.

Cutting-edge technology

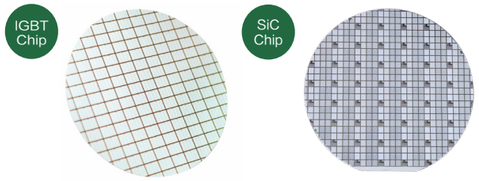
We provide pulsed power supply, solid-state switch, power semiconductor and other products that work in particle physics, power, nuclear energy and other cutting-edge scientific studies. We engage in a plurality of national or international scientific research projects, such as large particle collider, controlled nuclear fusion and power laboratory. We keep pace with scientific exploration and contribute to the great human cause of cutting-edge technology and innovation of our own accord.

Product Center

01 IGBT、SiC Chip

IGBT Chip and Diode Chip Products

Based on application requirements and aimed at application reliability, Sun.King has developed i20 IGBT and d20 diode chip sets, wherein i20 IGBT chip and d20 diode chip are built on advanced trench gate technology and soft recovery technology respectively.



02 IGBT、SiC Module

ED Type Module Products

With Sun.King's self-developed IGBT and diode chip embedded, 1200V and 1700VED Type modules have lower loss, and rated current of 1200V module peaks at 2×750A. The products are under mainstream package. The use of advanced packaging technology and premium packaging materials is aimed at ensuring sound performance, high reliability and long service life.

03 Anode Saturable Reactor

Anode saturable reactor (ASR) is one of the most important protective devices in the HV DC power transmission converter valve. It is used to protect the converter valve from HV surge and inclement weather. After years of independent research and development, Sun.King Technology manufactured the first made-in-China anode saturable reactor (ASR) for HV DC power transmission and became the sole homemade ASR supplier in China in 2009, and later in April 2010, received the certificate of "national accreditation of energy science & technology".

04 Power Capacitor

Sun.King Technology has top-notch automated power capacitor assembly lines in China, arranged with an array of state-of-the-art auto manufacturing devices. Certified by ISO9001, ISO14001 and OHSAS18001, our products dominates 23 type test reports and special test reports accredited by third-party organizations with clout. We are a permanent power capacitor supplier of two grid companies in China: State Grid and China Southern Power Grid.

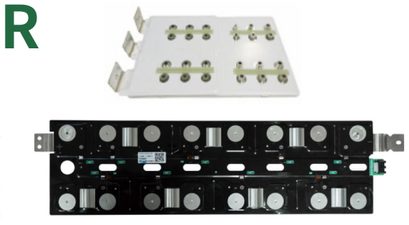
With over a decade of practice in power capacitor sector, Sun.King's technology and management teams furnish presentable and functional products, with painstaking attention to steady global supply of raw materials, sound product design, first-rate process and process equipment, and stringent quality control.

05 Power Electronic Capacitor

Power electronic capacitor is a metallized film capacitor in nature. It's compact, non-polarized and resistant to large current impact with low loss but high reliability, stability and safety. Instrumental in all sorts of power electronic system converters, it is in extensive use in flexible DC power transmission, rail transit, military equipment, industrial, mining, healthcare, and new energy.

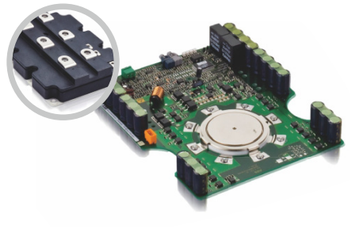
06 LAMINATED BUSBARS、CCS IN TEGRATED BUSBAR

Sun.King Technology boasts a technical team specializing in laminated busbar (LBB) technology development and manufacturing service. As a leading supplier and exporter in China, we serve to deliver a whole package of solutions and quality products to customers in NEV, PV, wind power, rail transit, communication and industry. By bringing in state-of-the-art automated busbar assembly lines and testing lines, we fully make sure of busbar manufacturing efficiency and product quality and get certified by ISO9001 quality management system.



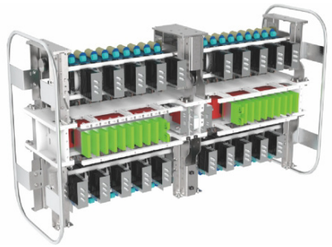
07 Product Distribution

As of 2002, Sun.King Technology has been engaged in the distribution of power electronic components and parts. By virtue of professional sales team and considerate after-sales service, we have been the world's largest franchised distributor of Hitachi Energy (formerly known as ABB) for years. The imported power electronic parts for sale work in power transmission and distribution, electric locomotive, mining, chemical engineering, nonferrous metals, steelmaking, etc. We have maintained long-term partnership with a galaxy of industry leaders, e.g., CRRC, State Grid Smart Grid Research Institute, China XD Group, XJ Group, NARI Group, China EPRI, Sungrow, Inovance, TBEA, Mingyang Electric, Hopewind and the list goes on.



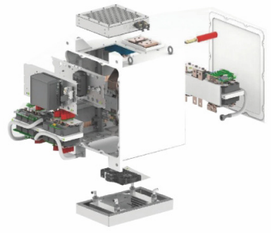
08 Solid-state AC Switch

Sun.King's solid-state AC switch, with strengths of quick switching, zero current switching, exact control of input moment, long service life and maintenance free, plays a crucial role in specific use cases. We have a well-established platform for power electronic technologies of AC switches with verified uses, including technology of structure of solid-state switch valve blocks, technology of optical control of HV valve blocks, sync trigger technology, engineering design and reliability design for radiation analysis. We serve to tailor HV high-power AC solid-state switches in various uses for customers.



09 All-solid-state DC Breaker

Sun.King's all-solid-state DC breaker, comprising HV high-power IGBT-controlled devices, cuts down on time of current breaking from millisecond level of a mechanical switch to microsecond level of a DC breaker. The revolutionary technology will heavily rein in peak short-circuit current.



10 Pulsed Power

Pulsed power technology involves the creation of one (or more) short pulses that are associated with very high electrical power, or of a train of powerful pulses within a set short period of time. The device is typically required to process large current and voltage within a short period of time and in consequence, slope of current in application (di/dt) is beyond data range of a standard power electronic device.

With years of practice in technology and engineering application of pulsed power, Sun.King has participated in engineer projects with pulsed power ranging from several kj to several mj, voltage ranging from several kv to hundreds of kv, and peak pulsed current ranging from several amperes to hundreds of amperes. Relevant power electronic devices include thyristor, IGCT and IGBT. Where application goes beyond parameter range of a standard device, custom-made devices and relevant made-to-order drivers that are optimized by manufacturers yet not found in product manual will be used.

11 FACTS

In R&D and engineering application of Flexible AC Transmission Systems (FACTS), Sun.King Technology has mighty technical strength and rich experience, as well as a large team of technical experts.

With regard to combined power quality monitoring and regulation and energy conservation, Sun.King Technology devises an integrated solution of premium power supply for industrial parks, which improves power quality and ensures grid safety in industrial parks; HV/LV industrial energy-saving products play a supportive part in saving energy and reducing loss for industrial power distribution systems; a whole package of solutions of power quality analysis, assessment, monitoring and regulation, with significant improvements to harmonic wave, voltage fluctuation, flicker, negative sequence, etc., heavily bring down transmission loss, boost safety and reliability of power supply of devices, and extend service life.

12 Online Smart Grid Monitoring

Aligned with subjects at the forefront of power systems, Sun.King Technology is preoccupied in world-leading power transformation equipment, power transmission equipment, power distribution equipment monitoring and status diagnosis and fault identification in smart grids, and has originated around 30 species of hi-tech products.

We now have more than 50 power-related patents and 45 authorized patents, including 5 invention patents, 45 software copyrights for 7 software products, and over 70 test reports with authority. Besides, we have engaged in laying down industrial standards, such as Technical Specification of Online Partial Discharge Monitoring System for High Voltage Power Cables and Technical Specification of Online Grounding Current Monitoring System for High Voltage Power Cables. We have been rated a national hi-tech enterprise and software vendor accredited for registration of software products, gazelle company, member organization of China Electrical Equipment Industry Association (CEEIA), Wuhan enterprise of observing contracts and valuing credit for years.

13 Impedance Measurement

Sun.King Technology has the world's most advanced and accessible impedance measurement technology. Sun.King's LV/MV impedance measurement product collection is in a wide range of needs globally, including new energy power generation, electrified transportation, NEV charging management, elevators, smart grid, etc. Built on 7 years of painstaking effort EUR 6 million research grant of Helmut-Schmidt-University in Hamburg, Germany, the technology has been approved by international patent and included in around 40 papers concerned.