

# 东方晶硅

Oriental crystalline silicon 应时而生



## 公司企业的崛起辉煌时

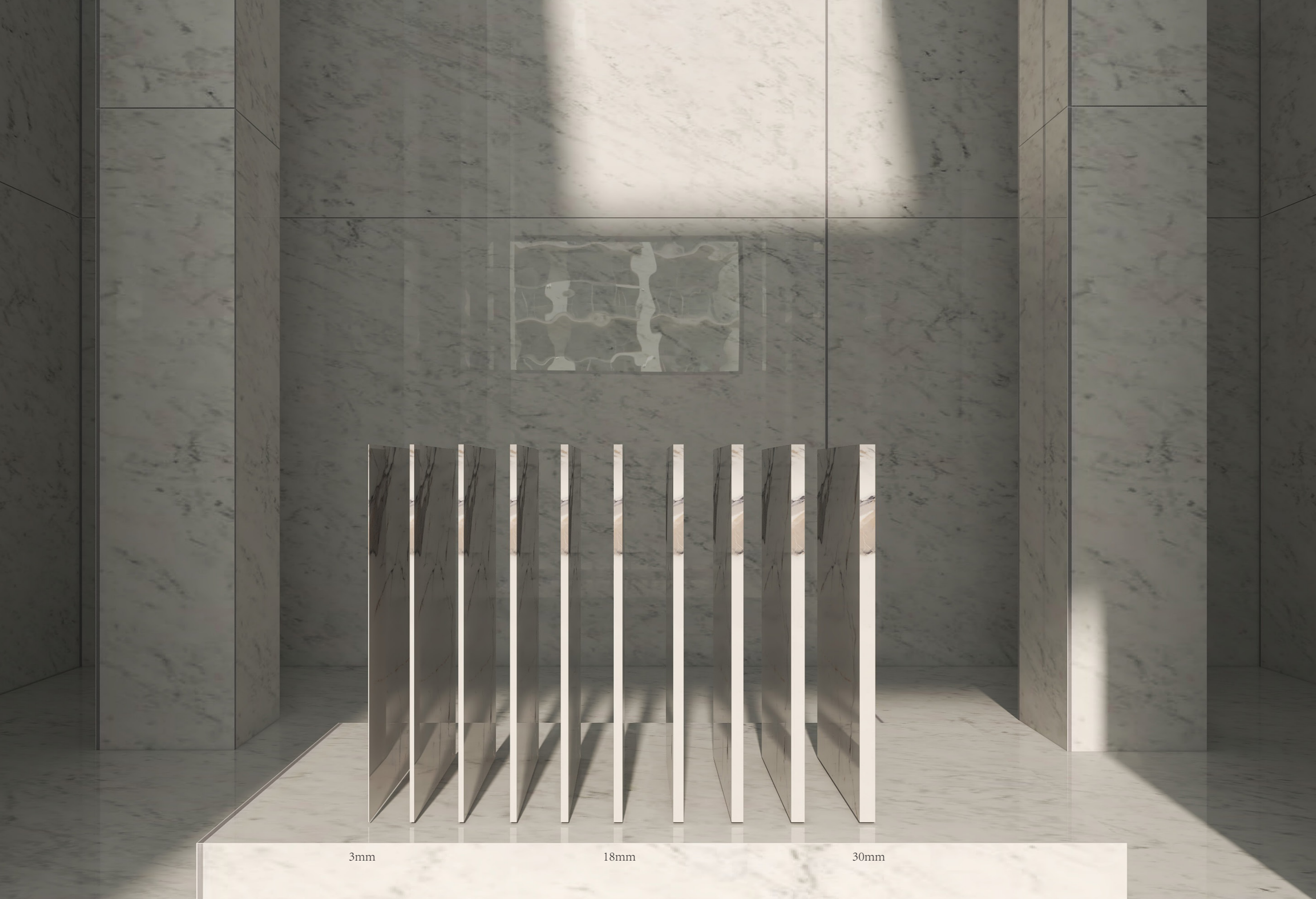
科技进步彰显国家实力，民族科技产业发展推动国家建设，保障民生之本，推动经济持续发展。兴固科技以发展民族科技产业为己任，专注生产新材料 - 东方晶硅，让东方科技之光照亮世界，创造美好未来。

诚信铸就品质 创新引领未来！

## THE RISE OF THE COMPANY IS BRILLIANT

The scientific and technological progress shows the strength of the country. The development of the national science and technology industry promotes national construction. To promote sustainable economic development and protect the foundation of people's livelihood. We take the development of the national science and technology industry as our responsibility. And focus on the production of new materials - Oriental Crystalline Silicon. We are going to let the light of oriental technology illuminate the world and jointly create a better future.

Integrity creates quality and innovation leads the future!



3mm

18mm

30mm



## 目录 Catalogue

公司简介 .....	05
产品简介 .....	08
原材料简介 .....	10
产品特性 .....	12
应用领域 .....	16
产品目录 .....	45
案例展示 .....	52



Oriental Crystalline Silicon

# Company profile

## 内蒙古兴固科技有限公司

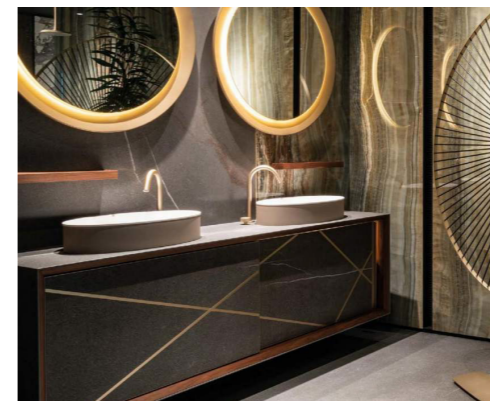
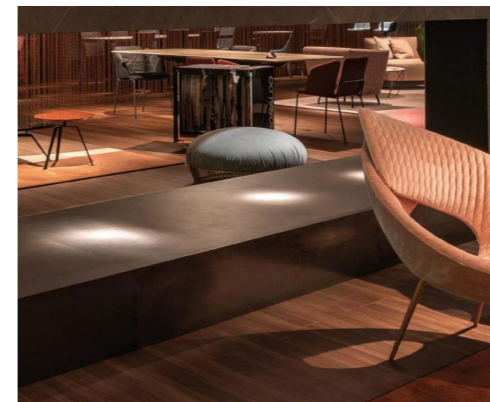
内蒙古兴固科技有限公司是一家集新型硅材料研发、生产、销售于一体的高新技术企业。公司计划在奈曼旗工业园区投资 65 亿元，建设东方晶硅新材料生产线 6 条，占地面积 246 万 m<sup>2</sup>，形成年产 5400 万 m<sup>2</sup> 东方晶硅新材料规模。项目全部建成投产后，可实现年销售收入 200 亿元，实现年税金 20 亿元。

Inner Mongolia Xinggu Technology Co., Ltd. is a high-tech enterprise integrating R&D, production, and sales of new materials. The company plans to invest 6.5 billion yuan in the Naiman Banner Industrial Park to build 6 new material production lines for Oriental Crystalline Silicon which is covering an area of 2.46 million square meters. An annual output of 54 million square meters of new materials for Oriental Crystalline Silicon will be formed. After the project is completed and put into operation, the annual sales income will be 20 billion yuan and the annual tax will be 2 billion yuan.

## Product Application



- Furniture 家具
- Overall cabinet 整体橱柜
- Desktop 桌面
- Bathroom 卫浴
- Mechanical lining 机械内衬

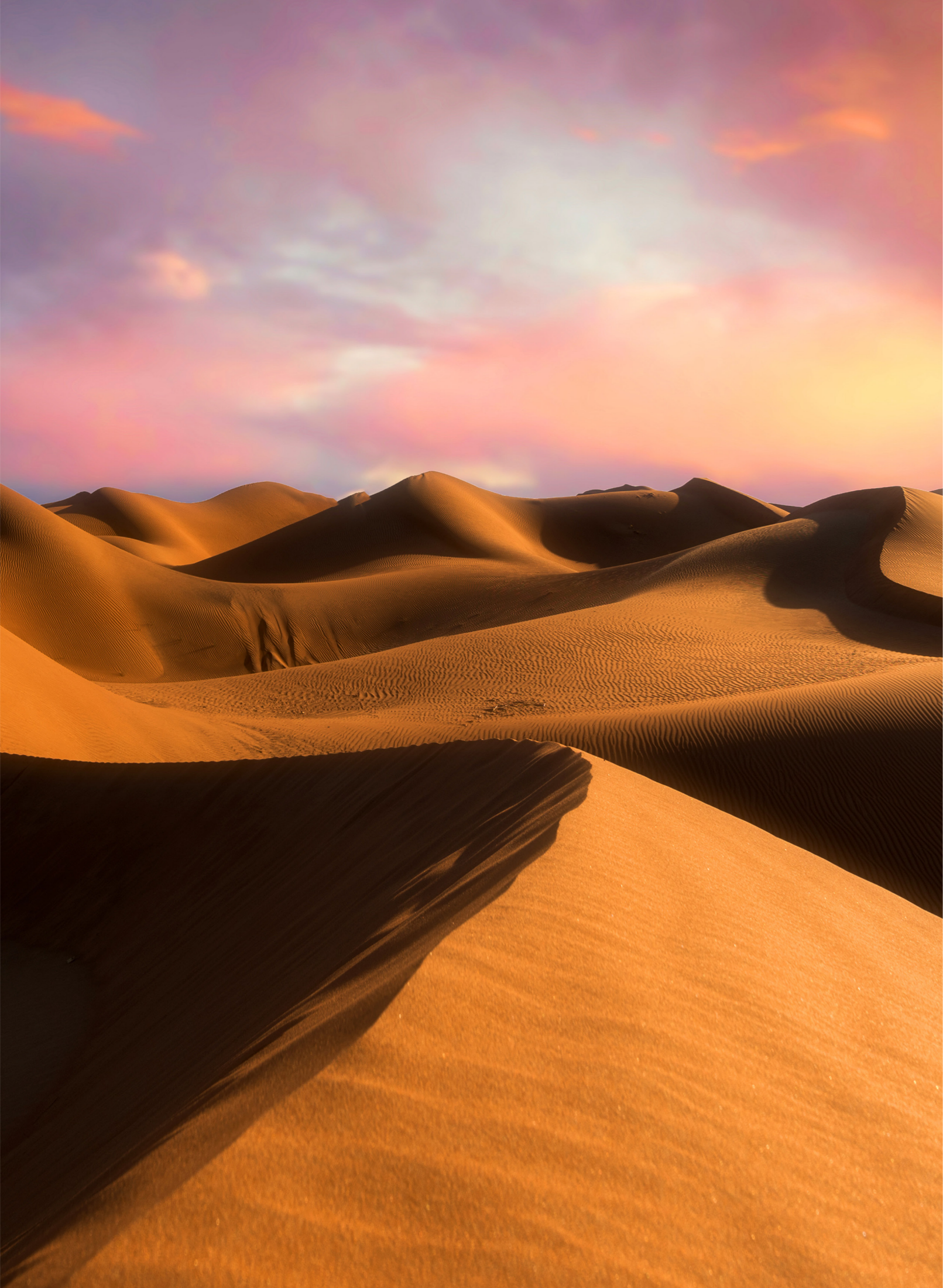


## 东方晶硅·产品简介

东方晶硅是一种无机非金属新型基础硅材料，所采用生产工艺、设备均为企业自主研发，产品厚度为3—35毫米。其中3—6毫米、25—35毫米的产品填补了国内市场空白。产业线为世界最大规模生产线。产品采用首创先进工艺制成，具有易加工、加工误差小、成品方便进行任意复杂的形状弯曲等优良性能、可承受850℃的高温、零气孔以及无漏电、可与众多材料粘合、抗辐射性高、具有耐高电压和宽频谱的优点、热膨胀系数易与大多数金属匹配等优良性能。因此可广泛应用于5G通讯、电子电器行业、智能家居、医疗器械行业、航天军工、铸石行业、安保行业、文体行业、工艺品行业、机械行业、化工行业、建材装饰行业等多个领域的开发应用。

## Oriental crystalline silicon · Product Introduction

The Oriental Crystalline Silicon material is a new type of inorganic non-metallic basic silicon material. The production technology and equipment used in this project are independently developed by us. And the industrial lines are the longest production lines in the world. The thickness of the products is 3-35 mm. Among them, the products of 3-6 mm and 25-35 mm fill the gap in the domestic market. Our product is made with innovative advanced technology, which is easy to process, with small processing error, and is convenient for complex curved shape design. It can be bonded with many materials. Oriental crystalline silicon itself has zero pores, no leakage, and with high voltage resistance and wide frequency spectrum. It can withstand a high temperature of 850 ° C and has high radiation resistance. And it has the advantages of high voltage resistance and a wide frequency spectrum. The thermal expansion coefficient is easy to match with most metals and other excellent properties. Therefore, it can be widely used in 5G communication, smart home appliances, and electronic and electrical, smart home appliances, medical machinery, aerospace and military, cast stone, security, cultural and sports, handicraft, machinery, chemical, building materials, and decoration and other fields.

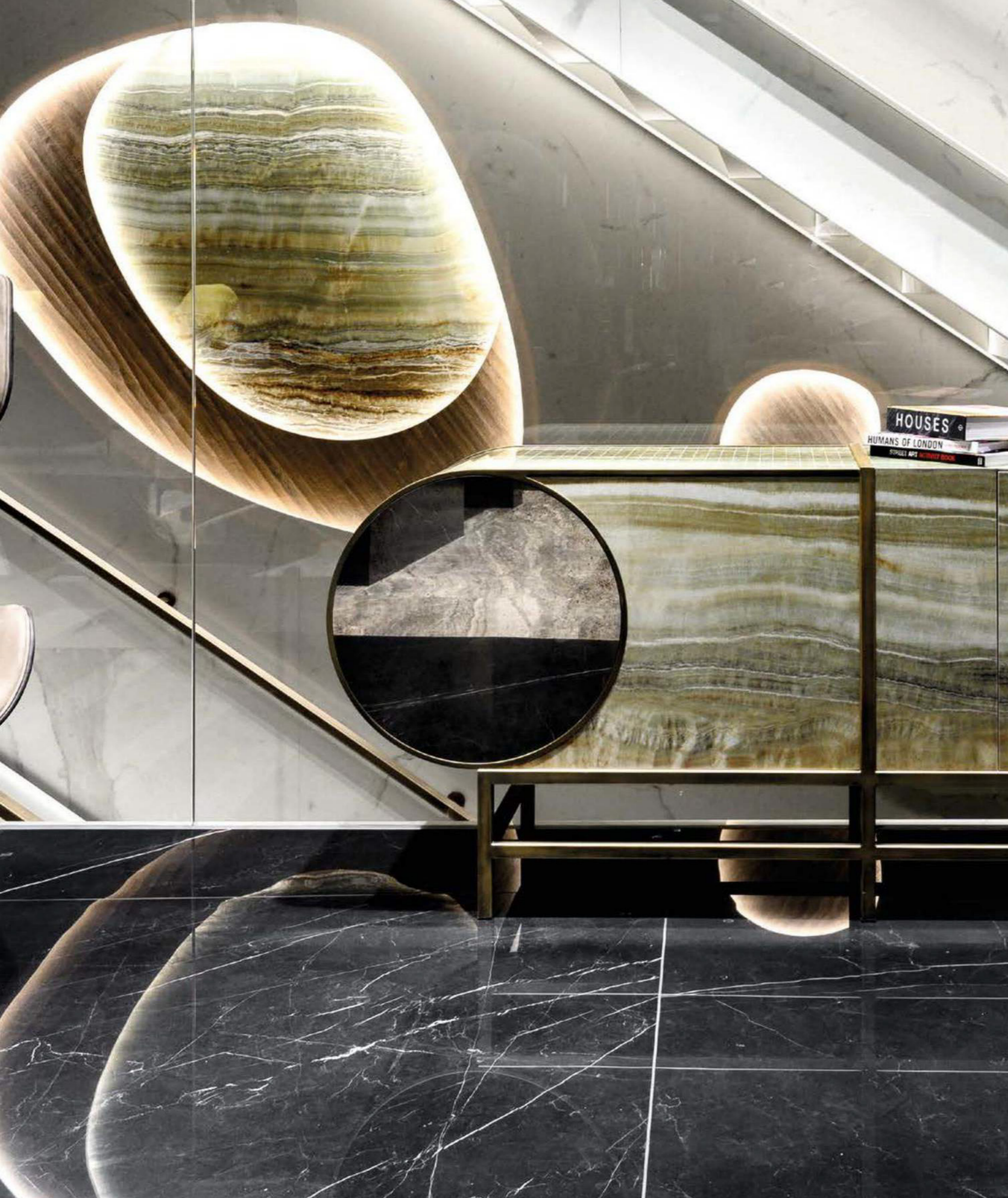


## 东方晶硅·原材料介绍

东方晶硅新材料，产品原料为砂、石灰石、方解石等质优价廉的本地原材料，还可部分采用粉煤灰、铜、铁、高岭土尾矿等工业再生资源为原料；东方晶硅是一种无机非金属新型基础硅材料，是由非晶相和晶相组成的合晶产品，与金属合金材料相比较合晶材料品种更多，应用更加广泛，被誉为是第四次工业革命的基础材料之一；东方晶硅材料具有机械强度高、耐酸碱腐蚀、无辐射、光洁耐磨、纳米级的材料密度、加工精度更高、缝隙更小、不热胀冷缩，在  $-100^{\circ}\text{C}$  至  $850^{\circ}\text{C}$  温度范围不炸裂不变形、色彩丰富靓丽、长期日照不风化不褪色、绝缘性能优良、介电损耗少、介电常数稳定。产品可进入许多下游产业，如电子电器、智能家居、厨具卫浴用品、工业机械、化工建材、内外装饰、工艺品制作、医疗器械、5G 通讯、航天军工等的配套产品制造业。

## Oriental crystalline silicon · Product Introduction

The raw materials of Oriental Crystalline Silicon New Materials are local raw materials with low prices such as sand, limestone and calcite, and some industrial wastes such as fly ash, copper, iron, and kaolin tailings. Oriental crystalline silicon is a new type of inorganic non-metallic new basic silicon material, which is a composite crystal product composed of amorphous phase and crystalline phase. Compared with metal alloy materials, it has more varieties of crystalline materials and is more widely used. It is regarded as one of the basic materials of the fourth industrial revolution. Oriental crystalline silicon material has high mechanical strength, acid and alkali corrosion resistance, no radiation, smooth and durable. It has nano-scale material density, higher processing precision, smaller gap, and no thermal expansion and contraction. No explosion or deformation in the temperature range of  $-500^{\circ}\text{C}$  to  $850^{\circ}\text{C}$ . It has rich and beautiful colors, and it will not weather or fade under long-term wind and sun. It has excellent insulating properties, less dielectric loss and stable dielectric constant. Products can enter many downstream industries, such as electronic appliances, smart household appliances, kitchenware and bathroom products, industrial machinery, chemical building materials, interior and exterior decoration, handicraft production, medical equipment, 5G communications, aerospace and military industries and so on.



## 产品特性

## PRODUCT FEATURES



光洁耐磨



不风化不褪色



无辐射



纳米级细密度



耐酸碱腐蚀



色彩丰富



机械强度高



硬度高



抗污抗弯



不热胀冷缩



绝缘性能佳



绿色环保





新晶硅材料			
项目	标准	结果	
光泽度	优等品 ≥ 85	95	
弯曲强度	≥ 30 MPa	95.5 MPa	
莫氏硬度	5级-6级	6.5级	
抗急冷急热性	无裂隙	无裂隙	
化学稳定性	耐酸性	K ≤ 0.2% 且外观无变化	K=0.03% 外观无变化
	耐碱性	K ≤ 0.2% 且外观无变化	K=0.04% 外观无变化
放射性	外照射指数	A类 ≤ 1.0	0.1
	内照射指数	A类 ≤ 1.3	0.2
燃烧性能A(A1)级	炉内平均温升	≤ 30°C	4°C
	平均持续燃烧时间	0s (无持续燃烧)	0s
	平均质量损失率	≤ 50%	0.10%
	总热值(PCS)	≤ 2.0 MJ/KG	0.129 MJ/KG
吸水率		0.00%	
体积密度		2.57 g/cm <sup>2</sup>	
耐磨性能		7.2x10 <sup>-4</sup> g/cm <sup>2</sup>	
抗冲击强度		2.9 J	
压缩强度		477 MPa	
冲击韧性		4.2 KJ/m <sup>2</sup>	
线性热膨胀系数		7.1x10 <sup>-6</sup> °C <sup>-1</sup>	
防滑系数	干态	0.6	
	湿态	0.51	

产品具有卓越的抗污性，方便清洁维护。  
 东方晶硅的吸水率极低，几乎为零，多种污秽浆泥、  
 染色溶液均可清除擦净，特别便于清洁维护。

The product has excellent stainresistance and is convenient for cleaning and maintenance.

The water absorption of oriental crystalline silicon is extremely low, almost zero.

All dyeing solutions can be cleaned and wiped, which is especially convenient for cleaning and maintenance.



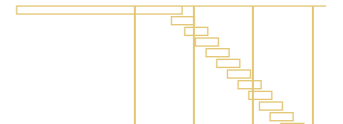
# APPLICATIONS



DOORS &  
SLIDING WALLS



TOPS &  
KITCHEN



FLOORS  
WALLS & STAIRS



VENTILATED  
FACADE



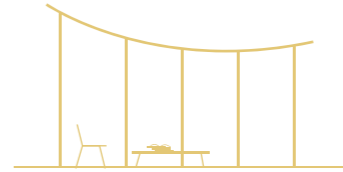
TOPS &  
BATHROOMS



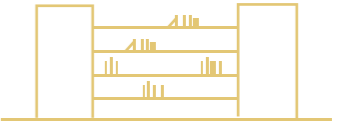
BACKLIGHT



INTERIOR  
& DESIGN



CURVED  
SURFACES



SHELVES  
& CONSOLE



东方晶硅制作装饰的墙面、地面、台面、柱体表面等材料，具有强度高、易加工、无辐射、不老化褪色、色调均匀、永不浸湿、抗污染的性能。厨具卫浴强度高、耐高温、无污染、细腻光滑、高温不裂、抗酸碱油渍、易清洁、抗磕碰、更高端、更大气、无侵蚀，使用体验和外观比玉石更优，其表面的光洁度和抗风化性能都远远高于天然石材及其它装饰材料。

The oriental crystalline silicon can be used to make decorative walls, floors, countertops, column surfaces, and other products. They have the advantages of good quality, easy to be processed, no radiation, no aging and fading, uniform color tone, never soaking, and anti-pollution performance. For kitchen utensils and bathrooms. They have the advantages of high quality, high-temperature resistance, no pollution, no erosion, and very smooth, etc. Moreover, it will not crack under high temperature, acid, and alkali resistant, is easy to clean, and resistant to bumping. It looks very high-end and magnificent. The sense of experience and appearance of these items are better than those made of jade. Besides the smoothness and cleanliness of the surface and weathering resistance are much higher than that of natural stone and other decorative materials.



产品应用于墙面、台面展示

The product is used for wall and table display





产品应用于建筑外立面展示  
The product is applied to the display of building facade



东方晶硅制作的罗马柱，其柱身材料整洁无暇，光面柱体明朗大方；线条简洁明快，流露出古老文明的气息，其独特的异形可弯曲特性使得观感上更加具有艺术气息，独特的异形工艺也可用于雕刻纹路，使得所雕刻出的样品辉煌、华丽、大气。

The Roman column made of oriental crystalline silicon has a neat column body and looks bright and generous. The lines are simple and clear, revealing the atmosphere of ancient civilization. Its unique bendable properties make it more artistic in appearance and can also be used for engraving lines. The carved samples are brilliant, gorgeous and magnificent.

产品应用于台面展示

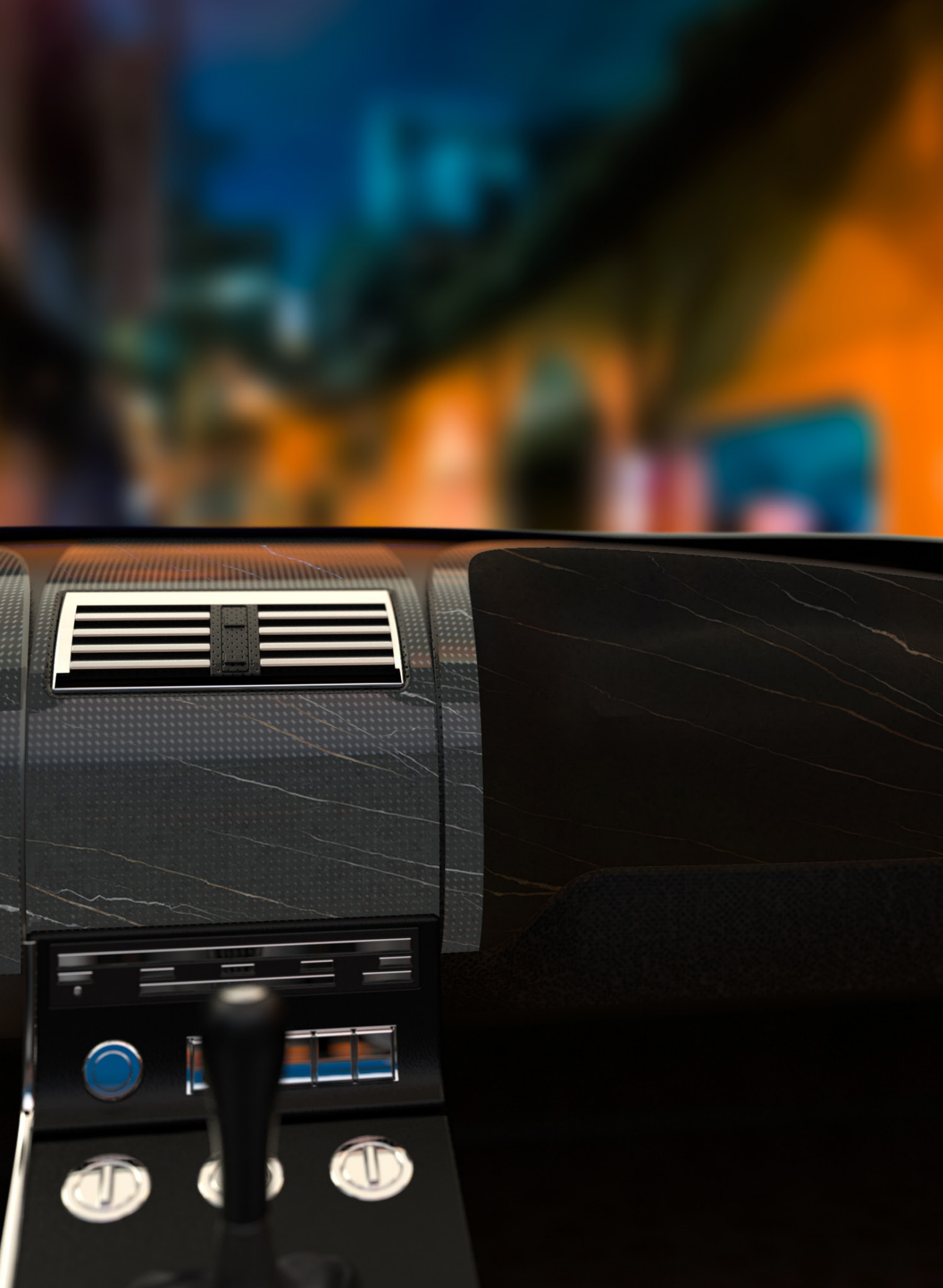
The product is used for wall and table display





产品应用于整体橱柜  
Product information Product display





航空发动机上晶硅新材料用来制作叶片、喷口和前端整流罩。晶硅新材料在高温燃气轮机中，用于制造叶片、燃烧筒、套管、主轴轴承等，用晶硅新材料代替镍基、钴基等耐热合金，成本可降低到原来的 3%。晶硅新材料也可以用于制造内燃机，可用于制造活塞内衬、气缸、预燃烧室、挺杆、阀门、喷嘴、涡轮增压器转子及轴承零部件。

The crystalline silicon is used to make blades, nozzles, and front-end fairings on aviation aircraft engines. Blades, combustion cylinders, casings, spindle bearings, and other objects made of crystalline silicon materials are used in high-temperature gas turbines. If ceramics replace heat-resistant alloys such as nickel-based and cobalt-based alloys, the cost can be reduced to 1/30 of the original. Crystalline silicon materials can also be used to manufacture internal combustion engines, piston liners, cylinders, pre-combustion chambers, tappets, valves, nozzles, turbocharger rotors, and bearing parts.



东方晶硅具有良好的生物相容性、生物活性和易加工性、有望成为未来骨科置换手术的重要材料，可以制作人造骨骼、人工股骨头、人工膝盖骨、牙齿等。替代不锈钢、钛合金和高分子聚合物对人体组织亲和性差的传统材料。

Oriental crystalline silicon has good biocompatibility, bioactive activity and is easy to be processed. It is expected to become an important material for future orthopedic replacement surgery. It can replace traditional materials with poor nucleophilicity to human tissues, such as stainless steel, titanium alloys, and high molecular polymers, to make artificial bones, femoral heads, kneecaps, and teeth.



东方晶硅制作的 5G 通讯天线专用外壳和手机壳；介电损耗少、高频性能好，既克服了金属材质的电磁屏蔽作用和上色性差的弱点，又比锆材料美观耐用。

The antenna special shell and mobile phone casing for 5G communication made by Oriental Crystalline Silicon has less dielectric loss and good high frequency performance. It not only overcomes the electromagnetic shielding effect of metal materials and the weakness of poor colorability, but also is more beautiful and durable than zirconium materials.



东方晶硅新材料温润光滑、色彩柔和、适合做各种工艺品；品相及强度与天然玉石相当，甚至高于天然玉石。用东方晶硅代替天然玉石制作大型工艺品摆件，价格就从数万数十万变成了数千甚至数百，而且品质更优，让高档艺术品进入寻常百姓家。

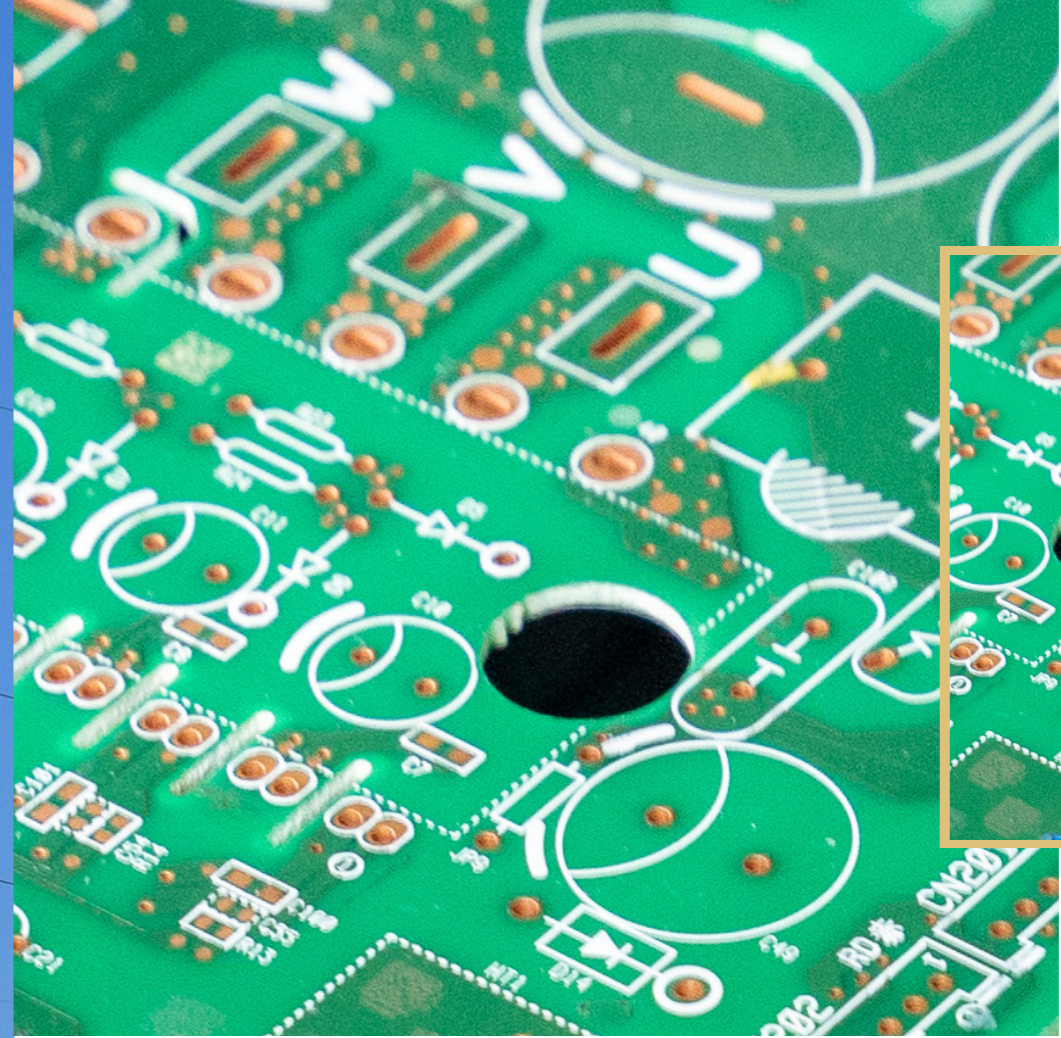
Oriental crystalline silicon has smooth surface and soft color, so it is suitable for all kinds of handicrafts. The appearance and quality are comparable to or even higher than natural jade. If you use Oriental Crystalline Silicon instead of natural jade to make large-scale handicrafts, the price will change from hundreds of thousands to thousands or even hundreds, and the quality will be even better. This allows high-end artworks to enter the homes of ordinary people.





东方晶硅新材料用于冰箱、洗衣机、空调等电气设备，板面光泽晶莹柔和、质地均匀，密度大、硬度高、经久耐磨、抗污染性强、维护方便，东方晶硅新材料吸水率极低，污物、染色液体不易侵入渗透，依附于表面的污物也很容易清除擦净；用做家电面板美丽靓丽，抗污染防漏电，不会老化锈蚀。

Oriental crystalline silicon is used in electrical equipments such as refrigerators, washing machines, air conditioners, etc. The surface is shiny and clear, the texture is uniform, the density and hardness are high, and it is durable and wear-resistant, with strong pollution resistance and easy maintenance. Oriental crystalline silicon has a very low water absorption rate, it is not easy to be penetrated by dirt and dyeing liquid, and the dirt attached to the surface is also easy to remove and clean. It makes the surface of household appliances beautiful, anti-pollution and anti-leakage, and will not age and rust.



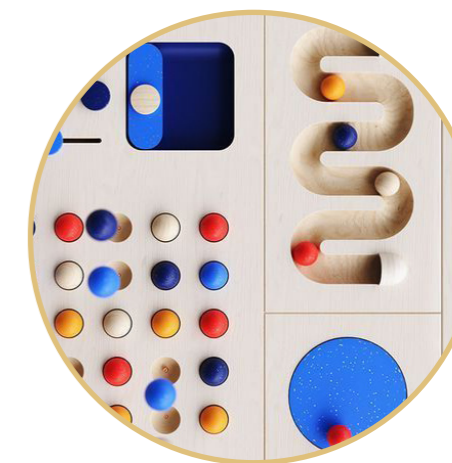
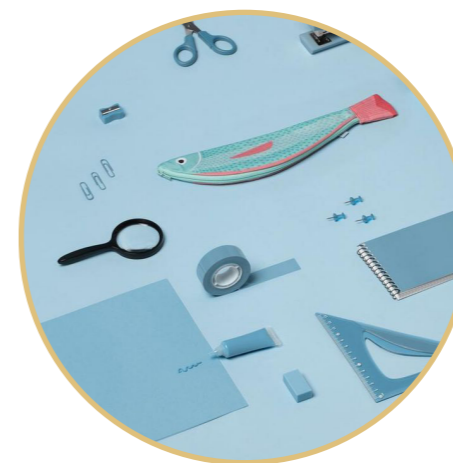
东方晶硅具有机械强度高绝缘性能优良、介电损耗少、介电常数稳定的特点，在电网输配电领域用作高频绝缘及高压绝缘套管材料，各项性能远优于长用陶瓷。在电子技术领域中作预制电路和芯片基板，还远可用作高频介电材料等。

Oriental crystalline silicon has the characteristics of high mechanical strength, excellent insulation performance, low dielectric loss, and a stable dielectric constant. It is used as high-frequency insulation and high-voltage insulation sleeve material in the field of electrified wire netting, and its performance is far better than that of commonly used ceramics. In the field of electronic technology, it can be used as prefabricated circuits and chip substrates, and can also be used as high-frequency dielectric materials.



东方晶硅优良的介电性能、良好的耐热性、抗热性和抗冲击性、低温敏感性、低膨胀系数在激光导航陀螺，光学望远镜等重要科技领域都有应用。

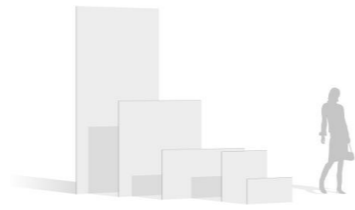
Oriental Crystalline Silicon has applications in important scientific and technological fields such as laser navigation gyroscopes and optical telescopes. Because it has excellent dielectric properties, good heat resistance, thermal shock resistance, low temperature sensitivity and low expansion coefficient.



东方晶硅制作的广告牌匾、透明灯饰、以及各种玩具和实验用品，不仅美观大气、实用耐用，而且其材料特殊成分也具有不锈蚀不褪色，不会释放有害气体等优良品质。

The advertising plaques, transparent lighting, and various toys and experimental supplies made by Oriental Crystalline Silicon are not only beautiful, magnificent, practical and durable, but also the special components of their materials have excellent qualities such as no rust, no fading, and no release of harmful gases.





WHITE SERIES



晶硅二代



晶硅三代

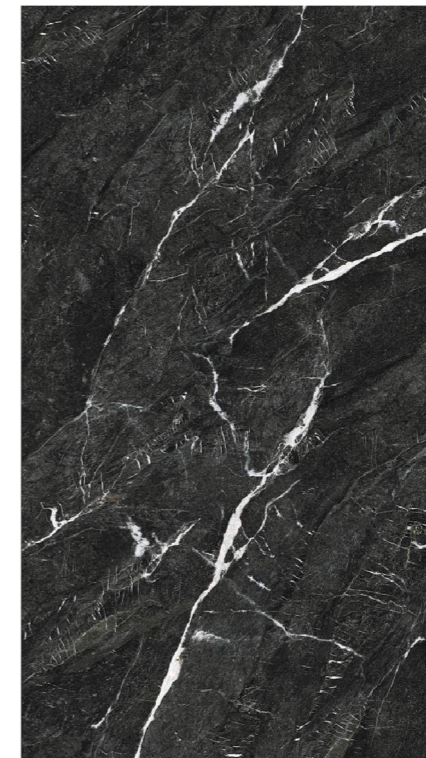
INKJET SERIES



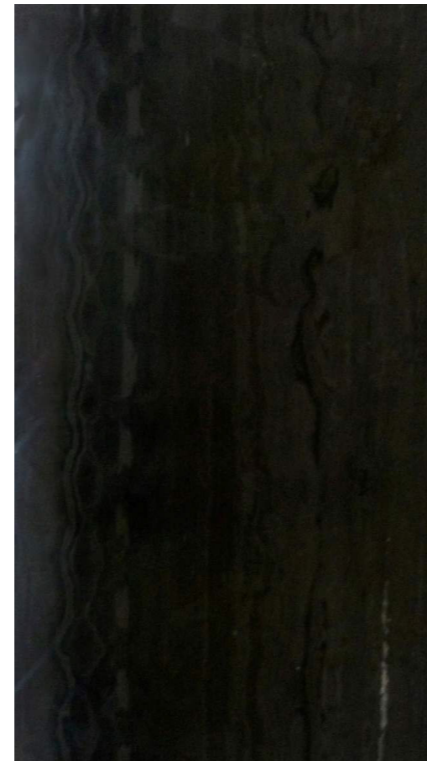
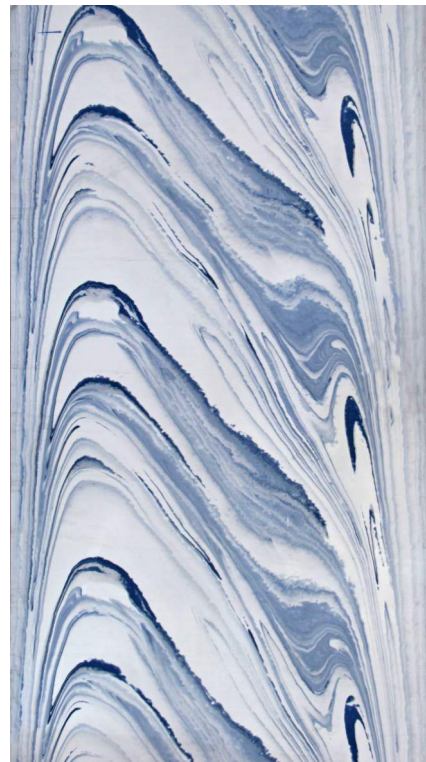
INKJET SERIES



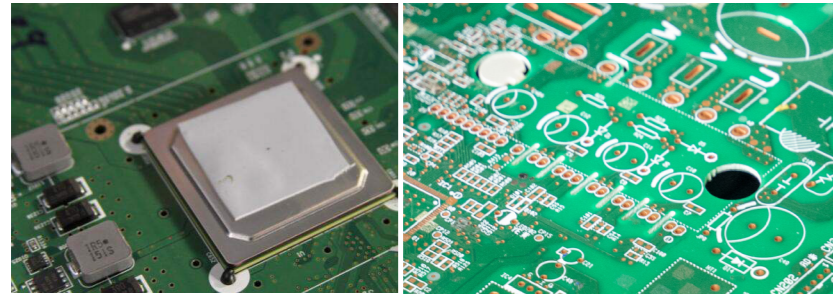
INKJET SERIES



FULL BODY SERIES



PCB 板材



厨房卫浴



家具家私



工业类



工艺品、异形艺术品

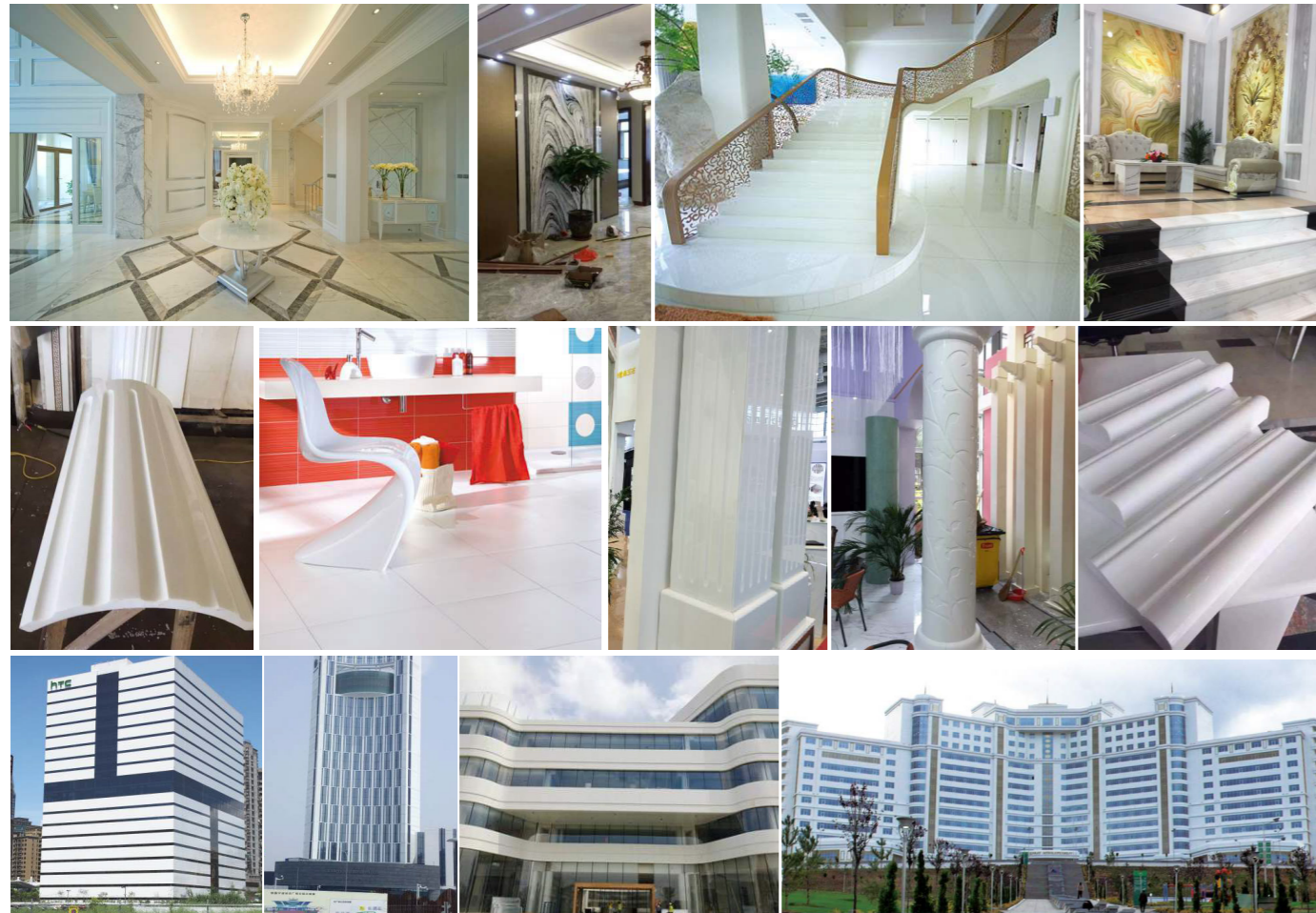


家电面板及结构件



装修装饰

未来应用

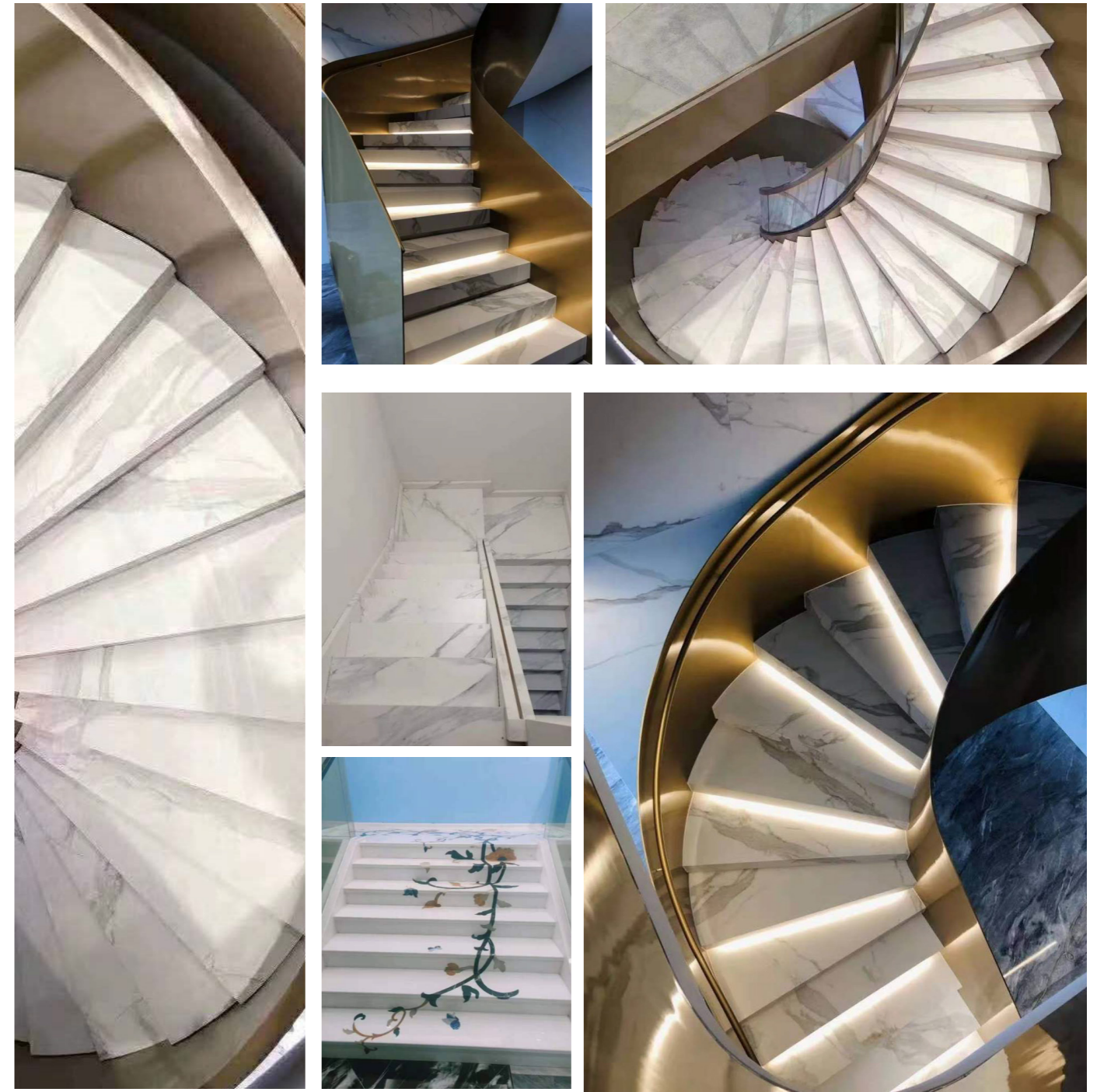


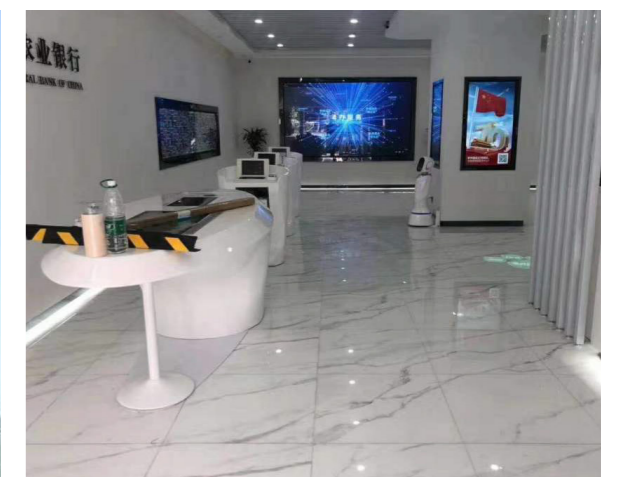
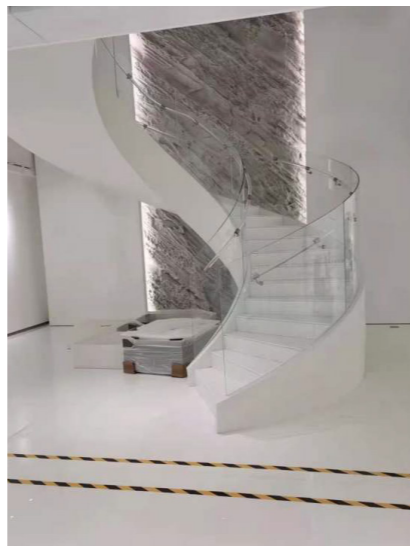
可充电微晶台面




整体实验室









亿万年前，地球还处于海洋形态时期，经过不断的地壳运动形成最原始的陆地，板块运动造成的火山喷发使得最原始的“硅”材料诞生在这片充满未知的土地上。“硅”材料又经过数万年的迁移、海侵、冰冻、风化形成了颗粒状的形态，原始社会、农业文明、工业文明时期人类未能发现其中独特的成分及广泛的使用价值，时间来到生态文明时期的今天，科技发达使得人类不断发现新材料为人类生活发展提供便利，兴固科技自主研发，结合石英砂、锂长石、碳酸钙、硅酸钠以及纯碱等多种无机矿物，赋予了“硅”材料新的定义，无机非金属新型基础硅材料“东方晶硅”应时而生。

Millions of years ago, the earth was still in the oceanic period, and the initial land was formed through continuous crustal movement. Volcanic eruptions caused by plate movement made the most primitive silicon material born in this unknown land. The silicon material has formed a granular form after tens of thousands of years of vicissitudes. In ancient times, people could not find the ingredients and their value when the technology was not developed. Time has come to today, and the development of science and technology has made human beings continue to discover new materials to facilitate the development of human life. Xinggu Technology independently researches and develops, combining various inorganic minerals such as quartz sand, hectorite, calcium carbonate, sodium silicate, and soda ash. A new definition of silicon material is given, and a new type of inorganic non-metallic material, Oriental crystalline silicon, emerge from time to time.

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