



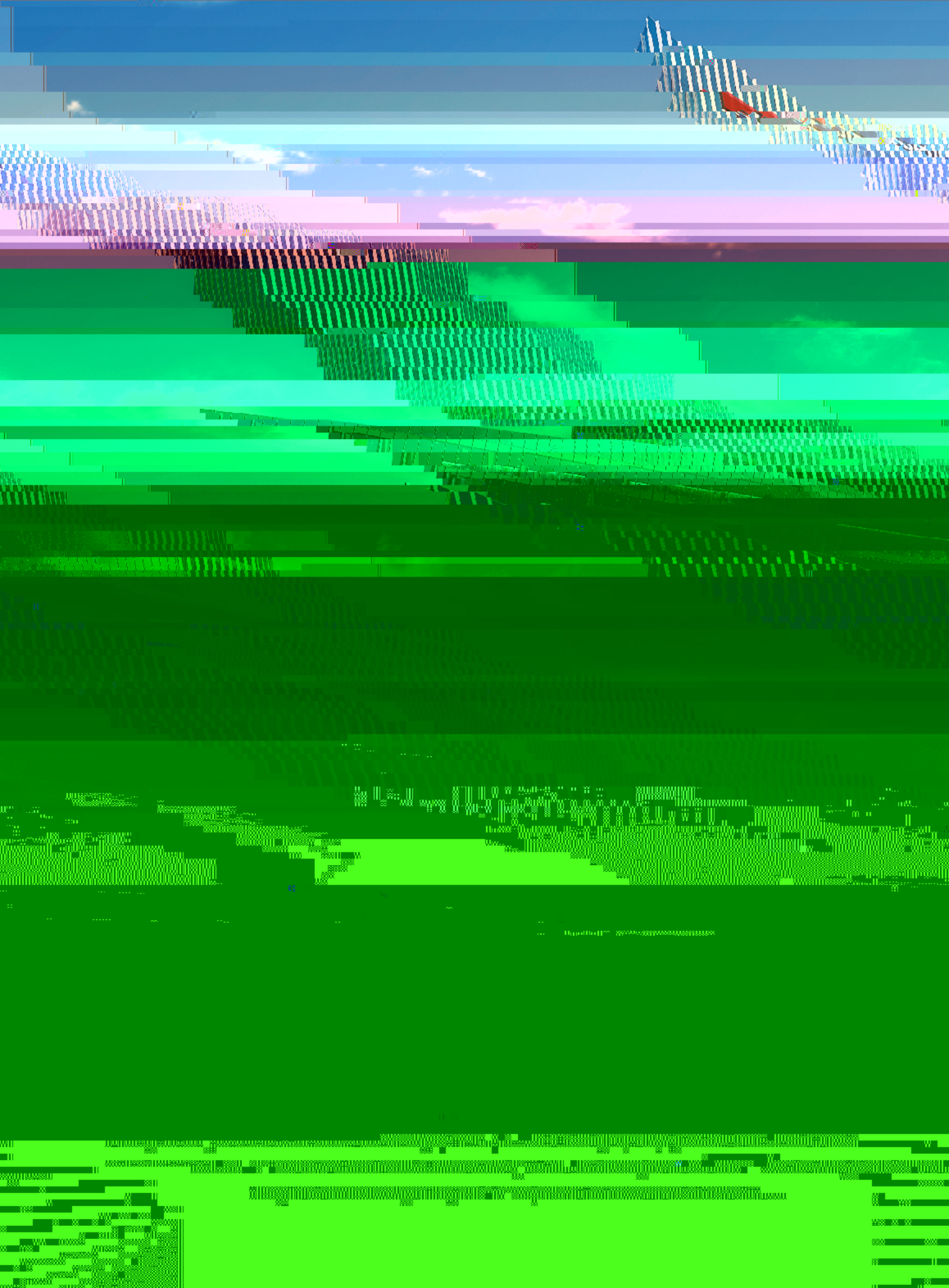
中国
航空

CHINA
JUSHI



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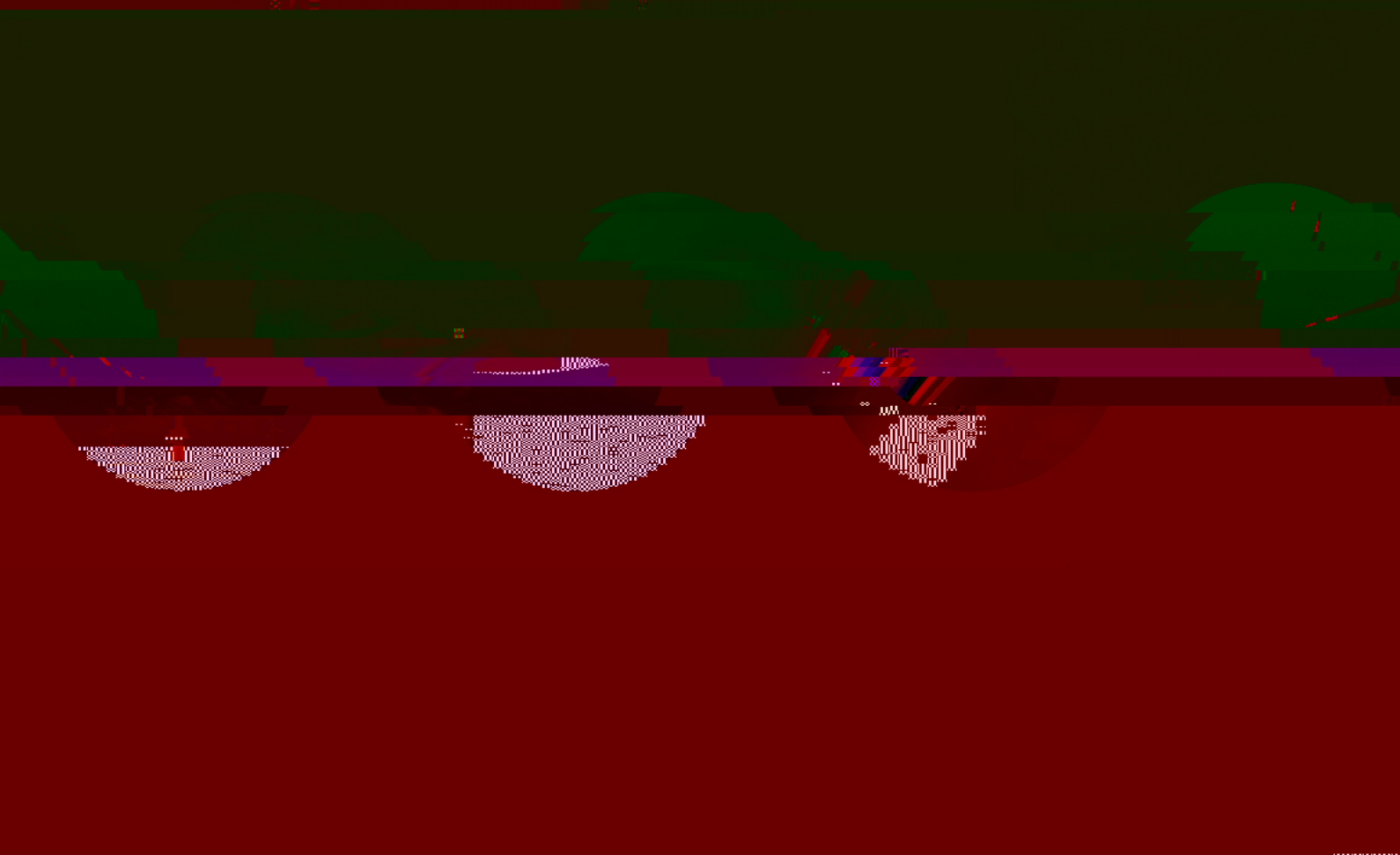
Ultra High Mod
Glass Fiber

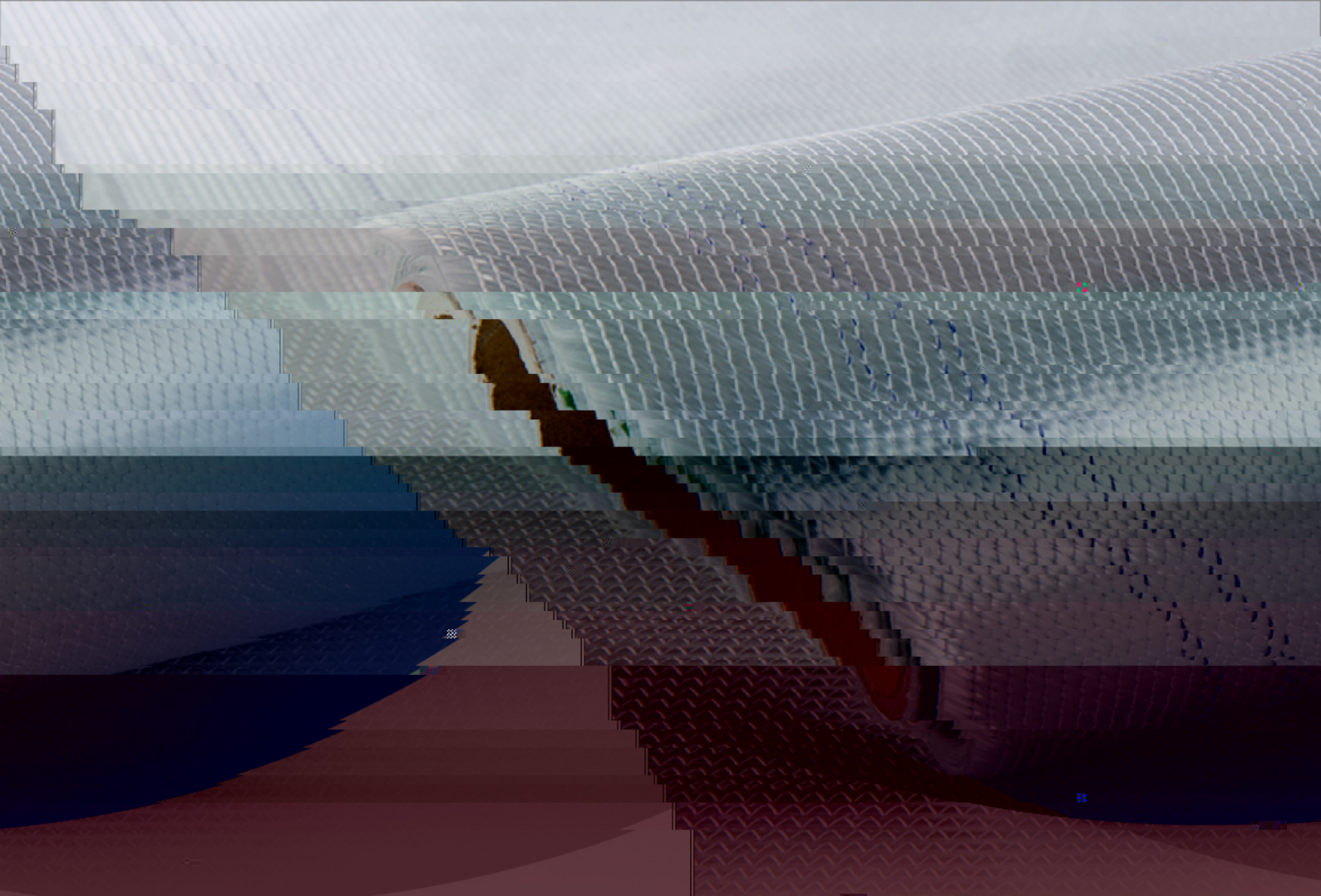


GOALS

E9 ultra-high modulus glass fiber represents Jushi's latest achievement in ultra-high modulus glass fiber. With

allowing it to enter...
...mass production...
...by using the...
...technology of Jushi, which greatly...
...performance and competitiveness...
...glass fiber. E9 offers a new...
...and higher performance...





BY GLASS

REVOLUTIONARY

ADVANTAGES

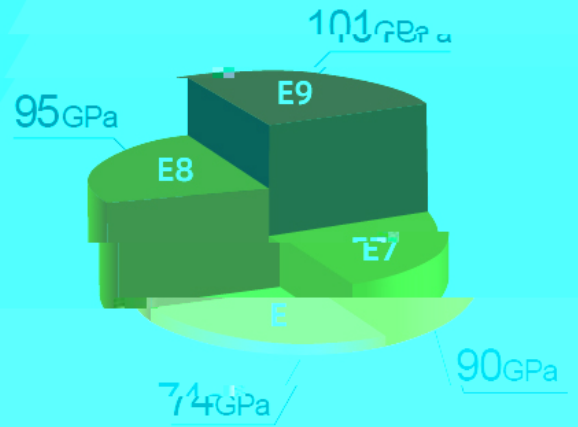
A NEW SOLUTION FOR HIGH-END PCB

OFFERED BY E-Glass FIBER

UNIQUE BENEFITS

- Higher Modulus**
A modulus over 250% higher than traditional E-glass
- Higher Strength**
A strength 100% higher than traditional E-glass
- Higher Modulus**
A modulus over 250% higher than traditional E-glass
- Higher Temperature Resistance**
Softening point 132°C higher than traditional E-glass, and coefficient of expansion 21% lower than traditional E-glass
- Higher Fatigue Resistance**
Much higher mechanical fatigue resistance, higher reliability of finished products
- More Environment-friendly**
Production process with flame-free glass composition to ensure clean production

ELASTIC MODULUS



COEFFICIENT OF THERMAL EXPANSION

COEFFICIENT OF LINEAR EXPANSION



TEST METHOD	UNIT	E	E7	E8	E9	PROPERTY
ASTM E1876	GPa	74	90	95	101	Elastic Modulus
ASTM D1130	ppm/K	70	68	67	66	Coefficient of Thermal Expansion
ASTM D1130	ppm/K	0.7	0.7	0.7	0.6	Coefficient of Linear Expansion

ITEM	TEST METHOD	UNIT	E	E7	E8	E9	PROPERTY
Water absorption rate in acidic solution	Soaking in 10% HCl solution at 23°C for 24 hours	%	0.05	0.05	0.05	0.05	Retention of Properties

EXCELLENT MECHANICAL PROPERTIES

Even better mechanical properties than E-glass. E-glass therefore is able to meet the requirements of the environment.

As a new, generating glass fiber of Jushi, E9J has higher modulus and strength, which provides excellent fatigue resistance and impact resistance to composite materials.

Wind power infrastructure, transportation, aerospace and manufacturing, etc. Applications include: wind blades, optical cable reinforcements, aircraft parts, automobiles, marine equipment, sports equipment, etc.

E9 class fiber can be widely used in various applications. Typical applications include:

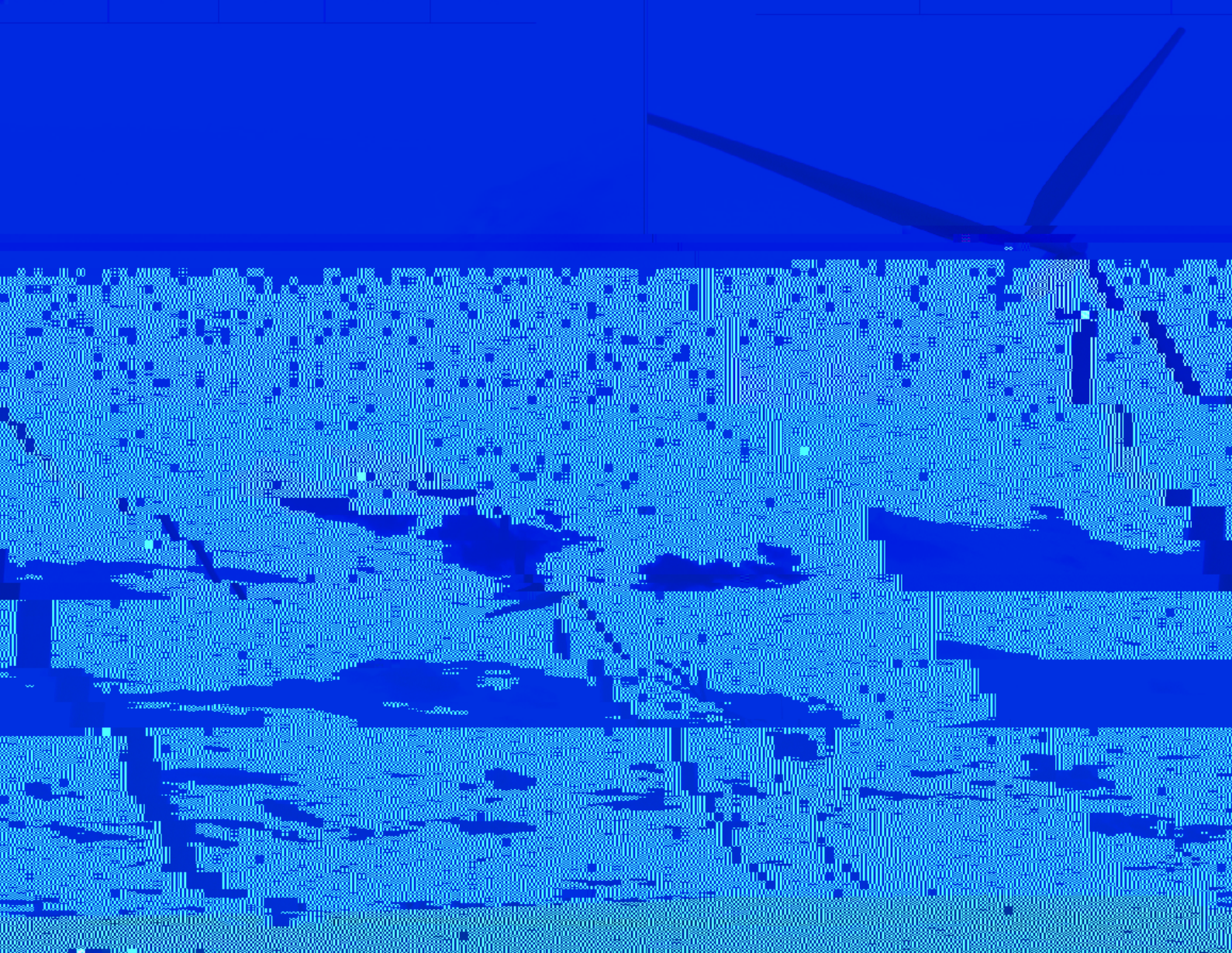
EXCELLENT PROPERTIES OF E9 CLASS FIBER

Item	Unit	E9	E-glass
Modulus	GPa	73.2	72.5
Tensile strength	MPa	2400	2300
Tensile strength at break	MPa	2400	2300
Impact strength	kJ/m ²	1.5	1.2
Volume resistivity	Ω·cm	>10 ¹⁴	>10 ¹⁴
Surface resistivity	Ω/sq	>10 ¹¹	>10 ¹¹
Water absorption	%	0.02	0.02
Thermal stability	°C	200	200
Chemical stability		Good	Good
UV stability		Good	Good
Electrical properties		Good	Good
Environmental stability		Good	Good
Processing		Good	Good
Cost		Low	Low

UD fabric laminates

Tensile strength (MPa) ISO 527-2 epoxy resin

Higher volume fraction



CERTIFICATIONS



China Jushi is a member of the International Management

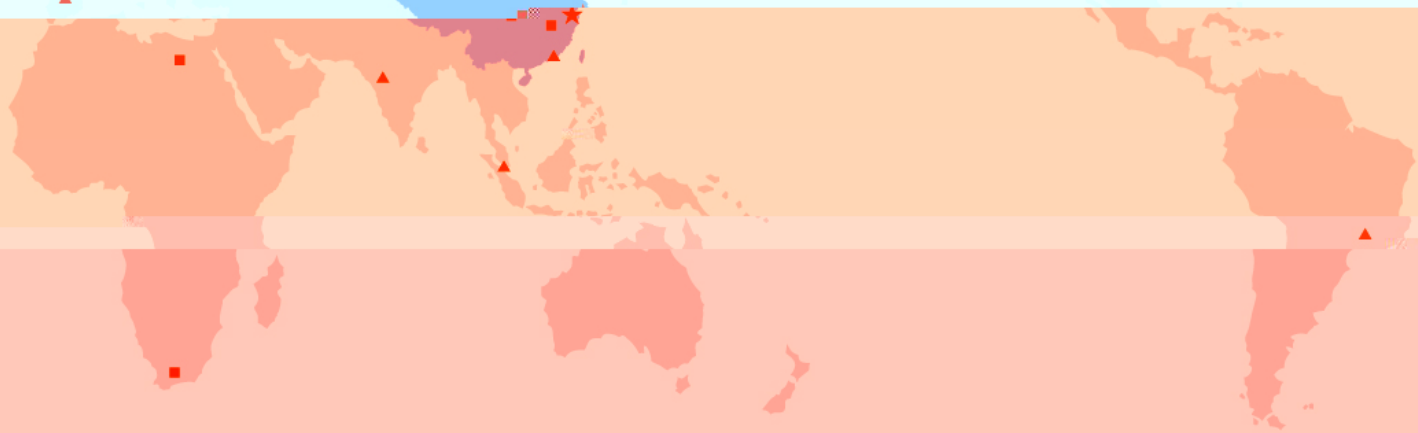
principles: "Apply science and technology to improve efficiency, and

meet. Build the brand, improve quality, and expand market share.

Strengthen management to improve efficiency, and

Employ talented people to enable innovation.





中国巨石股份有限公司

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