



Graphene Heating Products

Monolayer Graphene for Healthy Life

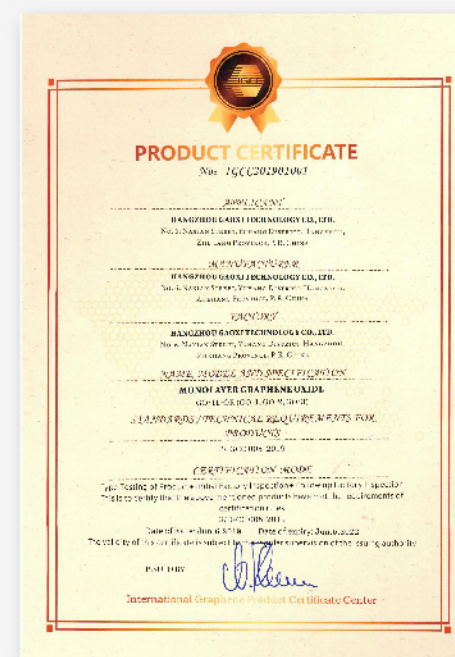
单层石墨烯康护新生活

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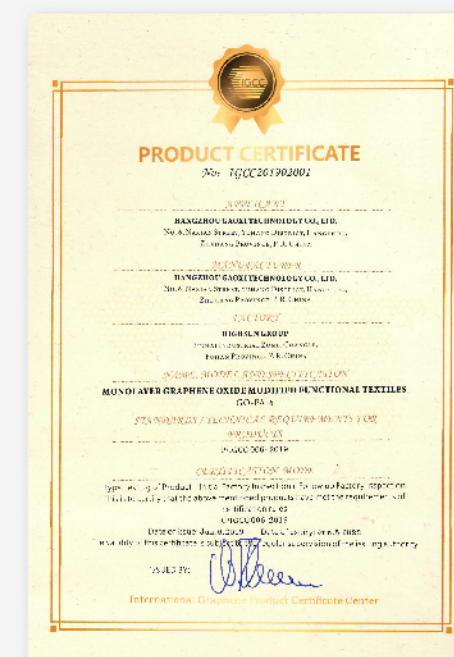


GaoxiTech, Your Premier Graphene Partner

- ◆ The world's first IGCC certified monolayer graphene oxide
- ◆ The only IGCC certified monolayer graphene oxide modified functional fiber in the world
- ◆ Three core technologies of GaoxiTech graphene heaters: aqueous graphene slurry, highly flexible graphene films and safe low voltage
- ◆ More than 100 invention patents
- ◆ GaoxiTech has the IPs from graphene to fibres
- ◆ Zhejiang University science achievements of graphene



The world's first IGCC certified monolayer graphene oxide



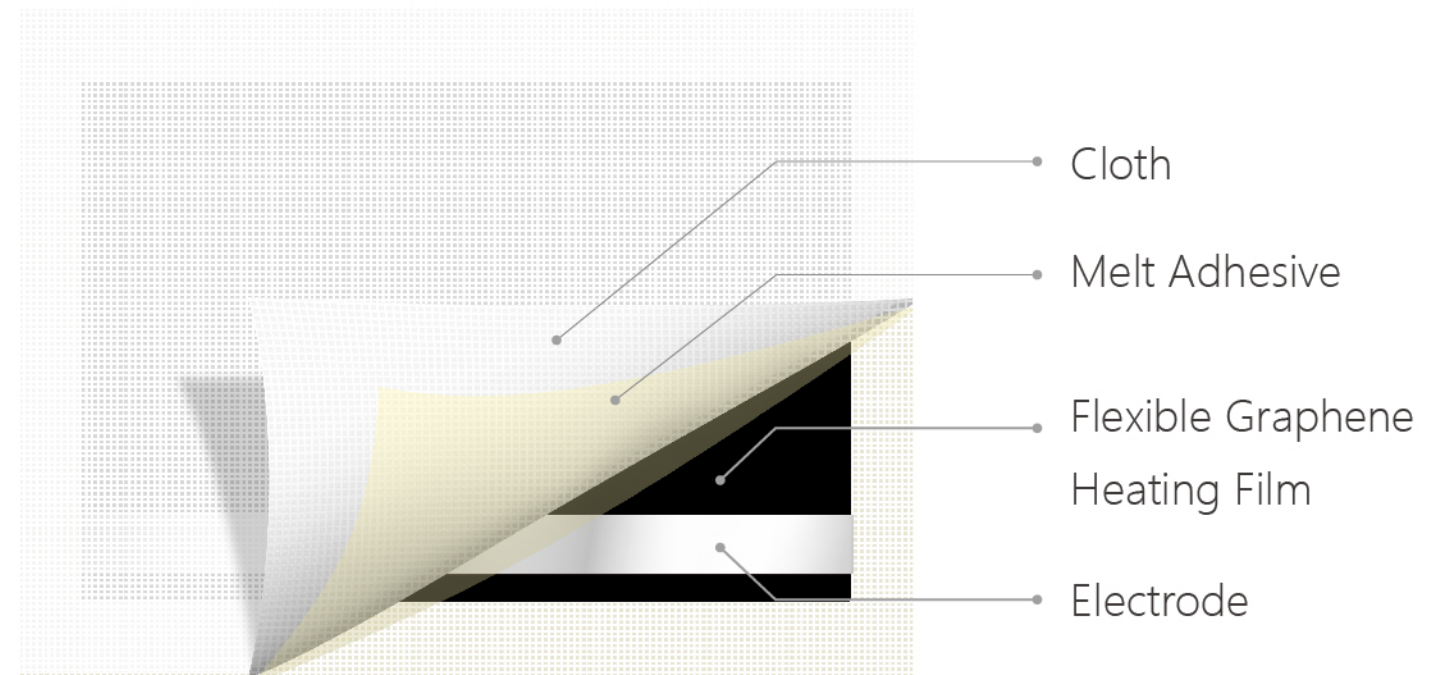
The world's first IGCC certified monolayer graphene oxide modified fiber

Advantages of graphene waterborne slurry

Green: No harmful ingredients, with zero organic solvents, zero pollution and zero waste during production.

Health: No harmful gases releasing during utilization.

Lead: The premium aqueous graphene slurry can be customized according to requirements of customers.



Graphene:

- ◆ Graphene is a two-dimensional carbon nanomaterial made from natural graphite.
- ◆ Nobel Prize achievement, as precious as diamond
- ◆ High electrical conductivity, high thermal conductivity, and high electro-thermal conversion.
- ◆ Much more flexible, foldable and robust, compared with the conventional carbon fiber and metal heating materials.

The heating principle of graphene heating pad

When electrified, the graphene heating pad can turn electric energy into heat energy by Brownian motion, and then radiates heat evenly in a planar manner to achieve thermal effect.



Top 5 Advantages



Aqueous Slurry
Green And Healthy



Fast And
Even Heating



High Flexibility &
excellent Foldability



Far-infrared
Healthcare



Long Life

Low voltage heating pad



Heating blanket using 24V、 36V

Superior to the traditional wire heating blanket, products not afraid of extrusion and bending.

Products flame retardant, no harmful electromagnetic radiation and ultimate safety.

The whole side heats up evenly, and you can feel embraced warmly and tightly.



Energy conservation, fast & even heating

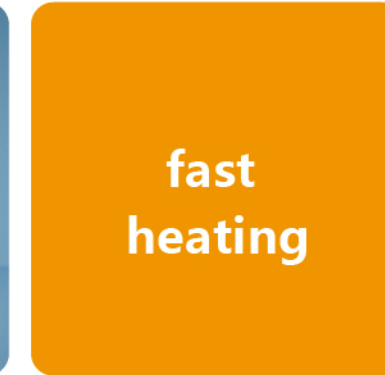
The electrothermal conversion efficiency of the graphene heating film can reach 99%, and almost all the electrical energy is converted into heat, which is 15-20% more energy-efficient than traditional heating films.

Compared with carbon fiber and metal heating wire, graphene heating film has faster heating rate and can reach a stable heating temperature in 30 seconds.

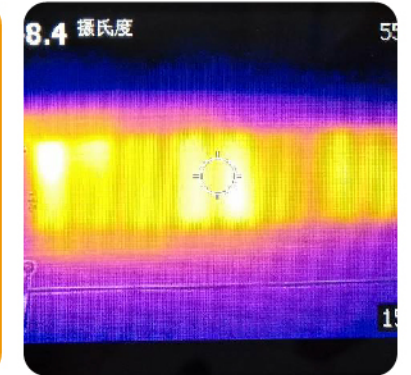
The heating temperature of the graphene heating film is uniform, which can avoid local high temperature, thereby increasing comfort and safety.



**energy
conservation**



**fast
heating**



**even
heating**



Safety and Environmental Protection

Low voltage: Using 3.7V, 5V, 12V, 24V, 36V, which is lower than human body safety voltage.

Green environmental protection material: A water-based graphene heating film made of pure water as a solvent.

No harmful gas volatilization and no harmful electromagnetic radiation are volatilized during production, processing and using, which is reflecting the concept of green environmental protection.

Long Lasting

The core material of the highly flexible heating film is graphene. When bending at any angle, the graphene with a wide particle size distribution can be self-repaired by multiple electric shocks, thereby it is ensuring that the product has low power attenuation.

Stable Heat Generation

Refusing oxidation, breaking and other problems, the service life can reach 30000h.



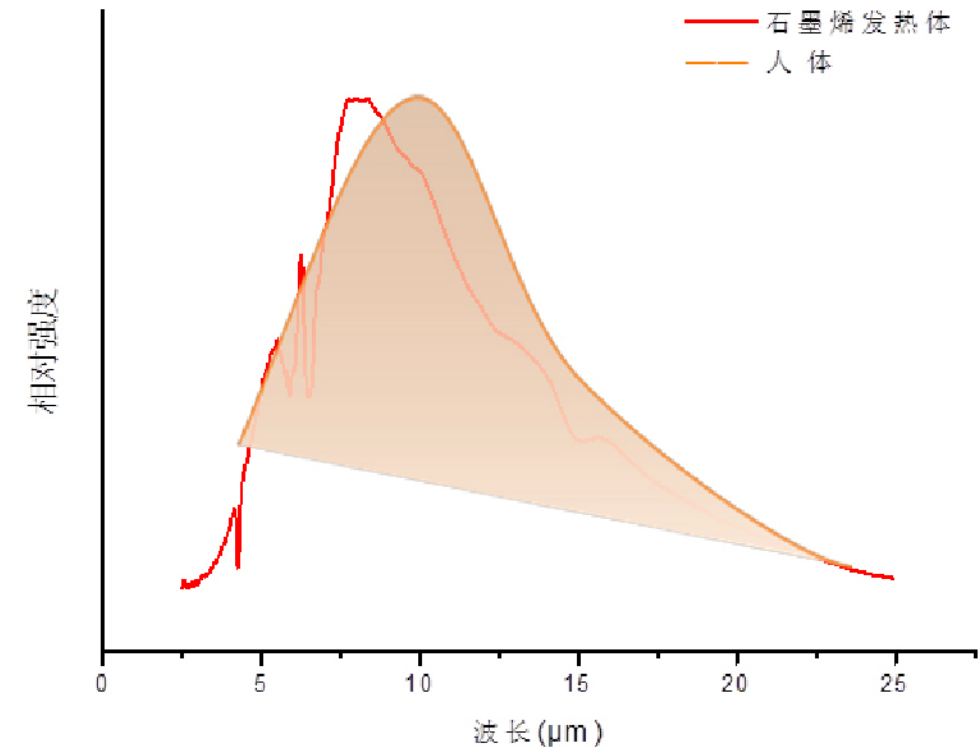
Flexible, Bending in any direction

Feather-light, soft

The temperature of the heating film is uniform in the process of bending.

Far-infrared health care

Graphene has a large conjugated structure with strong infrared absorption in the wavelength rang of 5-15 microns, making it an ideal far-infrared radiation material. And their energy can resonate with human tissue and cells to accelerate blood circulation and metabolism. It can effectively relieve fatigue, reduce oxidation and purity in the body to improve human immunity.





Activate biomolecular activity



Promote sound sleep



Boost your immune system



Promote cell regeneration, activate cells



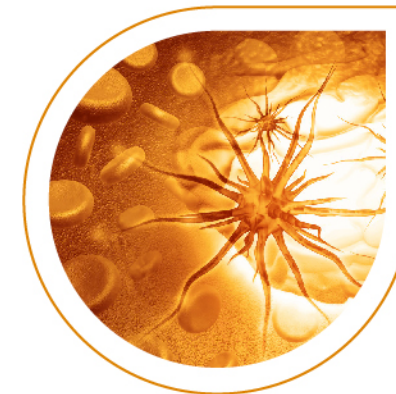
Enhance metabolism



Skin care



Helping ease the pain of arthritis



Affect blood circulation

Product & Marketing Research

Metal wire and carbon fiber take a big share of the market due to lower prices and simple technology.

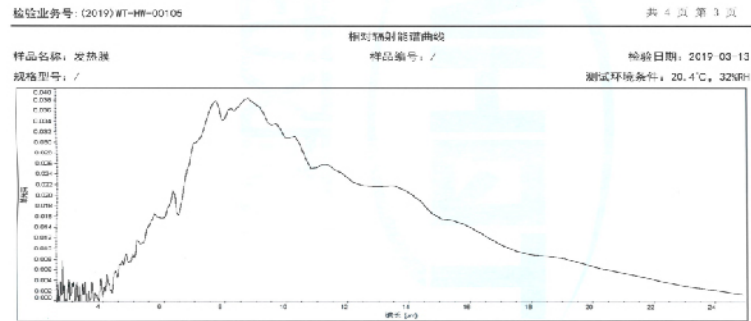
conductive composite wire, stripe graphite and carbon fiber are line heating. And it leads large power density and makes local temperature too high. What' s worse, these heating pads are weaker and more easily ruptured.

Gaoxi' s heating pads are plane heating style, which makes products more safety and even heating.

			
<p>GaoxiTech Graphene Heating Pad</p> <p>Power: 4.5W Temperature: 55 °C Heat difference: 10°C Heating time: 30S</p>	<p>Carbon Fiber Heating Pad</p> <p>Power: 4.3W Temperature: 60 °C Heat difference: 15°C Heating time: 350S</p>	<p>Stripe Graphite Heating Pad</p> <p>Power: 4.1W Temperature: 50 °C Heat difference: 10°C Heating time: 630S</p>	<p>Carbon Paste Heating Pad</p> <p>Power: 5.5W Temperature: 50 °C Heat difference: 15°C Heating time: 45S</p>

Test reports

国家红外及工业电热产品质量监督检验中心
武汉产品质量监督检验所
检验报告附图、附照专用表



检验员: 姜晓伟

国家红外及工业电热产品质量监督检验中心 武汉产品质量监督检验所 检验报告

检验业务号: (2019)WT-HW-01115 共 8 页 第 2 页

序号	检验项目	单位	检验方法	标准要求	样 本 检验结果	单项评定	备 注
1	外观	/	JG/T 286-2010 中 6.2 条	样品表明应光滑、平整,不应有明显的气泡,无划伤、脆化、破裂、变形、分层、污染等明显缺陷。	符合要求	合格	/
2	尺寸偏差	长度偏差	JG/T 286-2010 中 6.3 条	±1%	0%	合格	/
		宽度偏差	JG/T 286-2010 中 6.3 条	±1%	0.9%	合格	/
3	功率偏差	/	JG/T 286-2010 中 6.4 条	±10%	5%	合格	/
4	工作温度	℃	JG/T 286-2010 中 6.5 条	≤80	42	合格	/
5	温度不均匀度	℃	JG/T 286-2010 中 6.6 条	≤7	3	合格	/
6	升温时间	min	JG/T 286-2010 中 6.7 条	≤10	1	合格	/

国家红外及工业电热产品质量监督检验中心 武汉产品质量监督检验所 检验报告

检验业务号: (2019)WT-HW-01115

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15	工作寿命	h	JG/T 286-2010 中 6.22 条	≥30000	>30000	合格	/
16	法向全发射率	/	GB/T 7287-2008 中 18.2 条	≥0.83	0.89	合格	/
17	相对辐射能谱 (红外辐射波长范围)	/	GB/T 7287-2008 中 20 章	/	见附图	/	/

序号	检验项目	单位	检验方法	标准要求	样 本 检验结果	单项评定	备 注
19	拉力试验	/	GB/T 7287-2008 中 21 章	引出线能承受 30N, 历时 3min 的拉力试验, 不允许有位移、断裂现象。	符合要求	合格	/
20	机械强度	/	GB/T 7287-2008 中 24 章	样品应具有足够的机械强度, 并且其结构应经受住正常使用中可能会出现野蛮搬运。	符合要求	合格	/
21	耐冷热交变性	/	GB/T 7287-2008 中 16 章	经耐冷热交变试验后, 基体应无裂缝、不变形。引出线应无松动。	符合要求	合格	/

国家红外及工业电热产品质量监督检验中心 武汉产品质量监督检验所 检验报告

检验业务号: (2019)WT-HW-00091

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序号	检验项目	单位	标准要求	样 本 检验结果	单项评定	备 注
1	电-热辐射转换效率	/	≥55%	70%	合格	双面

以下空白



GaoxiTech 高烯科技



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Monolayer Graphene for Healthy Life 单层石墨烯康护新生活