

THE  **GRAPHENE**[®]
www.the-graphene.com

POLYMER FIBER
 presented by **CCL**



WHO WE ARE

Thank you for visiting THE GRAPHENE. We began our journey as CCL Apparel Manufacturer 40 years ago and have leveraged our extensive experience in the fashion industry to launch innovative graphene-based apparel products in 2022. This has solidified our position as pioneers in the field, and we strive to maintain this leadership role.

Our history began with true craftsmanship and the pursuit of constant innovation. For more than 40 years, we have made a name for ourselves around the world through our pursuit of excellence in every aspect of apparel manufacturing, and our relentless commitment to technological progress and quality.

In recent years, we have tapped into the transformative potential of graphene technology, integrating it into our apparel products. Due to its special physical properties and flexibility, graphene has revolutionized our product line, heralding a new era in apparel technology.

Through the development and manufacture of graphene-based apparel products, we aim to create more comfortable, sustainable, and functional products. Our products help provide a better quality of life for our customers, and our brands are at the forefront of creating these innovative products.

We are actively seeking collaborations with other brands as we develop and expand our product line. Our COLLABORATION program aims to create an innovative world of graphene-based apparel products by combining creative ideas with our technology.

The GRAPHENE invites you on a journey to shape the future of graphene-based apparel products. We look forward to walking this path together and building this future together.

DIVISION



CCL CO INC.

APPAREL
MANUFACTURE



3 POINT

NBA BAG
LICENSING



NOISE ENTERTAINMENT

EVENTS
SALES & MARKETING



ANNY'S BRIDAL

WEDDING & PARTY
DRESS

WORLD MAP



01.USA

OFFICE

Sales & Development
Domestic & South Central America Production Office

FACTORIES

Textile Mills, Textile Dying, Cutting, Print, Embroidery, Garment Dying

02.MEXICO

FACTORIES

Cutting, Print, Embroidery, Garment Dying,

03.GUATEMALA

FACTORIES

Textile Mills, Textile Dying, Cutting, Print, Embroidery, Garment Dying,

04.KOREA

OFFICE

Sales & Development, Asia Production Office

FACTORIES

Textile Mills, Textile Dying

05.CHINA

FACTORIES

Textile Mills, Textile Dying, Cutting, Print, Embroidery, Garment Dying

06.VIETNAM

FACTORIES

Textile Mills, Textile Dying, Cutting, Print, Embroidery, Garment Dying

07. BANGLADESH

Babylon Group

2-B/1, Darussalam Road, Mirpur, Dhaka-1216
Woven Top & Bottom

Glorious Sun

Hossain Plaza-1, Deowan Idris Road, Zirbo Main Road, Ashulia, Dhaka
Knit & Athletic Wear

Aaron Bach

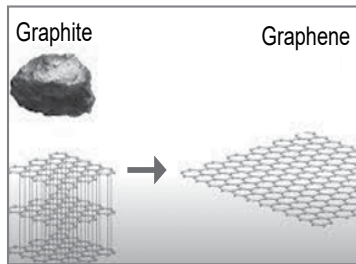
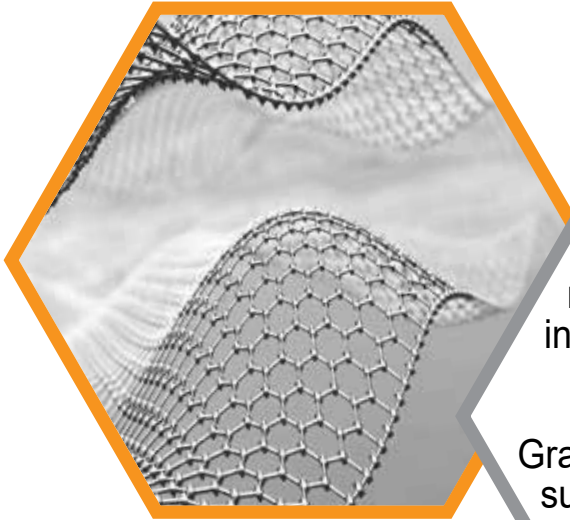
Sales Director

phone: 213-999-1395

email: sales@the-graphene.com

CONTACT

WHAT IS GRAPHENE?



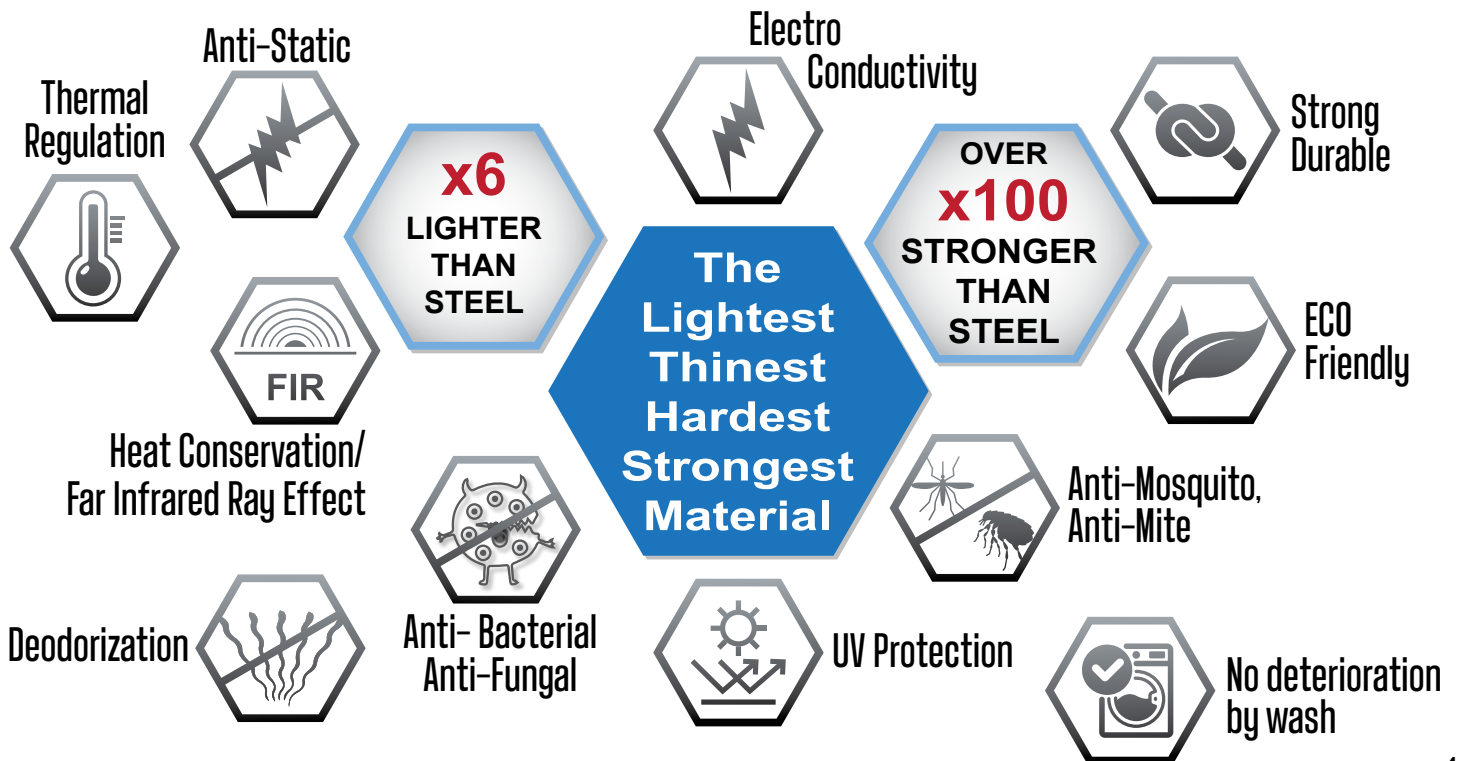
Graphene is a one-atom-thick layer of carbon atoms arranged in a hexagonal lattice, the thinnest material known to man, but remains amazingly strong.

Graphene is an exciting material that was revealed in the spotlight since the 2010 Nobel prize in physics went to Andre Geim and Konstantin Novoselov, who first isolated Graphene in 2004.

Graphene is exciting future material for its high sustainability and high functionality. It's thinner than one piece of hair horizontally, able to fit 100,000 graphene lamellae layers into just one strand while its density is three times harder than the face of a diamond.

Graphene just opened the door to a new future in the market, and new breakthrough in technology.

BEBEFITS OF GRAPHENE



GRAPHENE + POLYMER FIBER

THE GRAPHENE® POLYMER FIBER is the composite of GRAPHENE and various polymers such as PA, PET, PC, PBT, ABS, POM, and other plastic resins. It can be physically transformed through “Special Metal Nasso Filter Technology” called MEPPS (Mechanical Engineering & Polymer Processing Science Technology). It refers to a new type of composite, new material made by mechanically dispersing, fusion, and bonding, as well as removing and polymerizing gas, moisture, and low molecular weight compounds generated during the extrusion and injection process of PLASTIC. The graphene based composite fiber carries extraordinary properties such as: high electron mobility, high thermal conductivity, increased mechanical properties, easy functionalization as well as with numerous functionalities such as: anti-static, UV-protection, electro conductivity, anti-bacterial, thermal conductivity, deodorization, energy storage in flexible super capacitors, electrodes for batteries, sensors, etc. Graphene polymer fiber can be widely used in knitted and woven fabrics, and non-woven materials.



THE GRAPHENE® Composite Fiber can be transformed to yarns, fabrics, and textiles that are equipped with advanced properties to be applied to sportswear & activewear, home textiles, functional clothing and bedding, industrial materials, and many other high-performance, heavy duty materials.



THE GRAPHENE[®] YARN



THE GRAPHENE[®] is a brand manufacturer and provider of graphene-based polymer material and products for consumer and industrial markets.

We'd like to proudly introduce our **THE GRAPHENE[®]** graphene-based yarns and textiles promoted and launched on a global basis.

THE GRAPHENE[®] is ready to provide its valuable customers with worldclass & first scalable graphene yarns and fibers or wearable textiles produced based on MEPPS (mechanical engineering polymerization processing system) technology.

THE GRAPHENE[®] YARN CHARACTERISTICS

- Antibacterial functionality : Strain #1/#2 - 99.9% @ GO 0.04wt%
- Anti-fungal functionality : Zero(0)% growth
- UV (A/B/R) Blocking : > 94% @ GO 0.04wt%
- Fair-Infrared Radiation (health care) Effect: average 0.887~0.894 @ 37°C
- Thermal regulation, Heat resistance, Heat Dissipation and Heat retention
- Deodorization: GO/Caravida Fresh: >92% (Isovaleric/Nonenal/Acetic/Ammonia)
- Anti-static functionality
- Tribocharging: GO/PA (cloth: 900V, blanket: 690V),
GO/PET (cloth: 200V, blanket: 76V)
- Desorption (Dryness/minute) : GO/PET fiber – 190 vs. Normal PET fiber – 240
- Absorption (Rate: mm/10 min): GO/PET fiber –200 vs Normal PET fiber – 100
- Anti-flaming & Anti-dripping
- Mechanical properties (Toughness / Strength), Abrasion resistance, Cut resistance
- Excellent shrinkage rate performance & Volume stability
- Mite & Mosquito repellency
- KC Certificate approved
- Skin Irritation Test certified by PNK Skin Research Center : Dec. 31, 2020

THE GRAPHENE[®] FABRIC



A variety of fabrics employing graphene polymer yarns are under development, breaking the constraints of traditional fabrics. Our graphene fabric represents an optimal blend of style, comfort, and functionality, transcending the ordinary to redefine the future of fabric design.

Graphene polymer yarn masterfully combines the outstanding functionality of graphene with the durability and adaptability of polymers, thereby surpassing the capabilities of traditional fabrics. As a yarn, it offers the flexibility to be woven in a similar manner to conventional materials, such as curtain fabrics or synthetic wool, and accommodates a variety of knitting techniques. Moreover, it transcends the conventional graphene color limitations of black or grey, enabling the expression

of a broad color palette. This greatly widens the scope of potential applications and development opportunities.

Additionally, graphene's antibacterial properties endow garments made from graphene polymer yarn with odor suppression and bacterial growth resistance, ensuring freshness even after prolonged wear.

Furthermore, the exceptional thermal conductivity of graphene polymer yarn effectively manages heat and moisture, enabling clothing made from it to offer a cooler, drier fit.

Our development encompasses fabrics versatile enough for a range of applications, including knit and woven items, sportswear, outdoor clothing, and innerwear. We're also expanding into home goods, creating fabrics suitable for bedding and blankets. Beyond clothing, our work extends to accessories like hats and bags, as well as hygiene-focused textiles, such as masks and medical gowns, broadening the scope of graphene's application.

Graphene has a variety of options to develop fabrics to meet the diverse needs of customers. Depending on the country where CMT is to be performed, local TEXTILE MILL is used to reduce unnecessary costs and time so that optimal efficiency can be achieved.

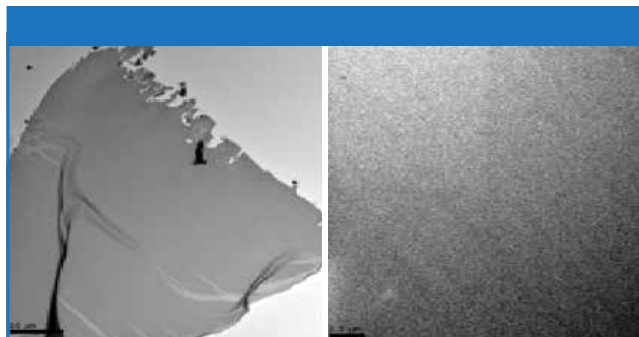
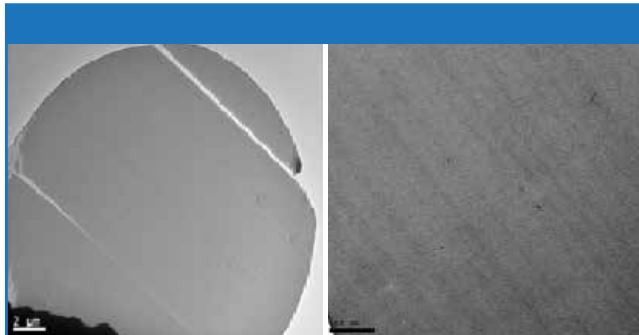
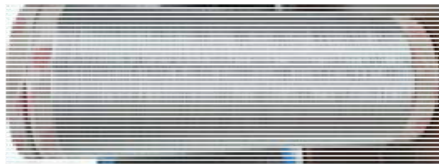
Our fabric, a testament to forward-thinking innovation and cutting-edge technology, sets a new benchmark in the apparel industry with graphene at its core. It promises to offer wearers an unparalleled experience, redefining the future of wearable textiles.

THE GRAPHENE[®] POLYMER FIBER

TEM ANALYSIS

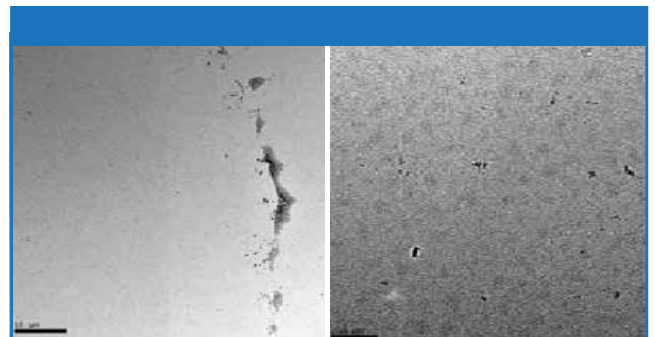
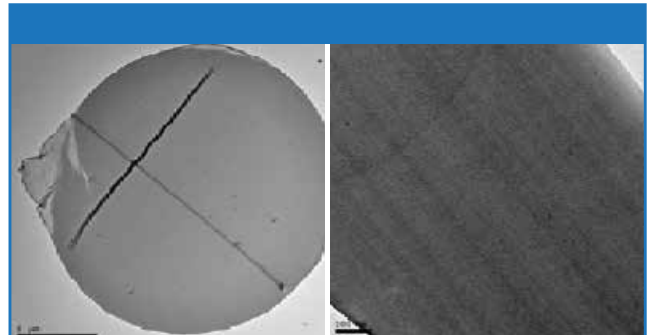
GO/PA Fiber (1.6 denier) Analysis

(GO: 0.04wt%)



GO/PET Fiber (2.7 denier) Analysis

(GO: 0.07wt%)



BEFITS OF THE GRAPHENE[®] POLYMER FIBER

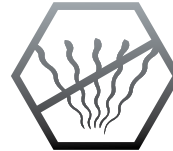
THE GRAPHENE[®] Fibers are NOT deposited, coated and laminated with graphene. Graphene oxides are 100% blended, fused and combined with polymer fibers.

◆ Fibers & yarns are functionalized

- Bacteriostatic/Antibacterial
- Thermal regulation
- Odor Neutralizing
- Mechanical Strength
- UV Resistance
- Therapeutic mechanism
- Mite & Mosquito Repellency



Anti- Bacterial
Anti-Fungal



Deodorization



Thermal Regulation
Far Infrared
Heat Dissipation
Heat Retention



Mechanical Strength
Abrasion Resistance
Cut Resistance



UV Blocking



Mite & Mosquito
Repellency



Anti-static



No deterioration
by wash

◆ Properties come from electron concentration

◆ Inherent properties

◆ Permanent – numerous wash cycles

◆ Environmentally Friendly – carbon based

◆ Safety First

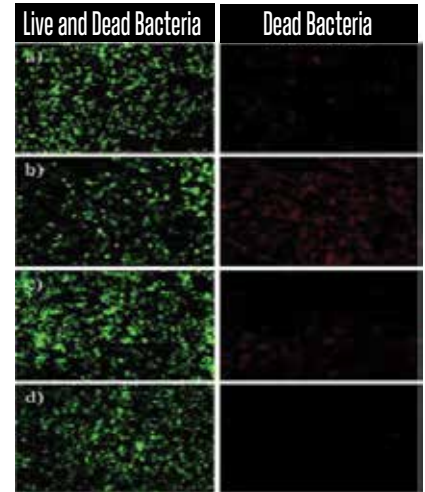
- No hazardous substance used
- Harmful synthetic binder not used

◆ Sustainable & responsible process

THE GRAPHENE[®] YARN ANTIBACTERIAL / BACTERIOSTATIC PROPERTIES

Antibacterial & bacteriostatic activities of graphene oxide are attributed mainly to the direct physicochemical interaction between graphene and bacteria that cause a deadly deterioration of cellular components, principally proteins, lipids, and nucleic acids. "Nano Knife Effect"

- GO/PET Fiber & Fabric tested: 99.9%
- GO/PA Fiber & Fabric tested: 99.9%



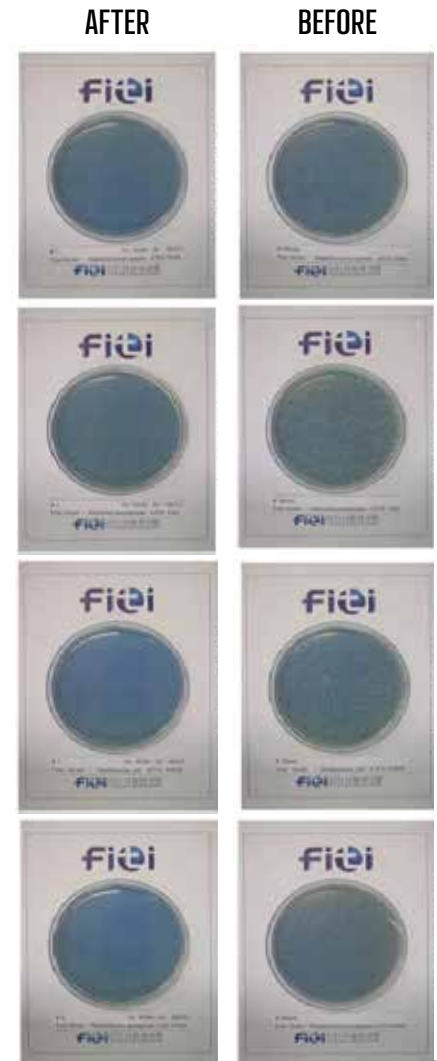
THE GRAPHENE[®] YARN ANTIBACTERIAL / BACTERIOSTATIC TEST RESULTS

		BLANK	#1
균주 1	접종직후 균수	1.9 x 10 ⁴	-
	18 시간 후 균수	9.0 x 10 ⁰	< 10
	정균감소율	-	99.9
균주 2	접종직후 균수	2.3 x 10 ⁴	-
	18 시간 후 균수	2.7 x 10 ¹	< 10
	정균감소율	-	99.9
균주 3	접종직후 균수	2.2 x 10 ⁴	-
	18 시간 후 균수	2.2 x 10 ¹	< 10
	정균감소율	-	99.9
균주 4	접종직후 균수	2.3 x 10 ⁴	-
	18 시간 후 균수	1.7 x 10 ¹	< 10
	정균감소율	-	99.9

01. 평균도 (KS K 0693 : 2016) : 세균수/mL, 정균감소율 %

주) 표준모 : 면
비이온계면활성제 : TWEEN 80, 접종균액에 0.05 % 첨가
사용공시균주 : 균주1 - *Staphylococcus aureus* ATCC 6538
 : 균주2 - *Klebsiella pneumoniae* ATCC 4352
 : 균주3 - *Escherichia coli* ATCC 25922
 : 균주4 - *Pseudomonas aeruginosa* ATCC 27853
* * 미만
 별첨사진참조

** 시험 결과 기록 완료 **

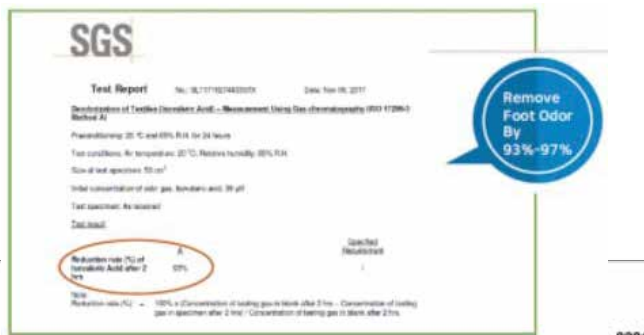


THE GRAPHENE[®] YARN DEODORRIZATION PROPERTIES

- Body odor is commonly the results of bacterial activities
- Bacteria living on our skin break down the secretion of sweat into odorous compounds
- Bacteria regulation reduces/neutralized odor
- Smell (Deodorization) tested by SGS

THE GRAPHENE[®] YARN ANTIBACTERIAL / BACTERIOSTATIC TEST RESULTS

Type	Deodorization Rate (After 2 hours,%)			
	Isovaleric Acid (Foot)	Nonenal Gas (Nonenal)	Acetic Acid (Sweat)	Ammonia Gas
Normal PET Fabric Normal PA Fabric	N/A	N/A	N/A	N/A
GO/PET Fabric GO/PA Fabric	93%-97% (SGC-HK, KAKEN-JAPAN)	92% (KAKEN JAPAN)	80.2% (FITI RESEARCH INSTITUTE)	99.9% (KOTITI-JTETC)
Applications & Usage	<ul style="list-style-type: none"> • Military Boots • Sneakers • Sports Socks • Navy Boots 	<ul style="list-style-type: none"> • Adult bedding • Nursing Home Items 	<ul style="list-style-type: none"> • Military T-Shirt • T-Shirt • Sports Uniform 	<ul style="list-style-type: none"> • Military Socks • Sports Socks • Sports Wear



KOTITI

소취성 시험, mg/kg
(일본 섬유평가기술협회 시험법(JTETC))

구분	시험결과
(A) 초기 농도	
제시상태(암모니아 농도, mg/kg)	
공시험	100.0
시료	99.4
감소율(%)	0.0
공시험	100.0
시료	0.0
감소율(%)	99.9

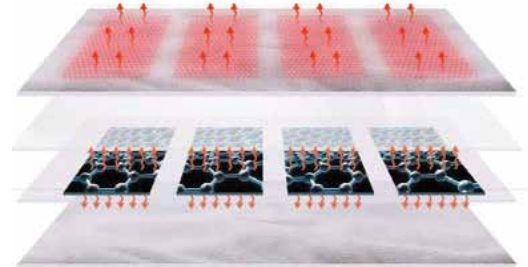
시험 방법: 뒷면 테두리란에 10cm x 10cm 의 시료를 넣고 초기 농도를 조정된 가스 농도를 주입한 뒤 2시간 후 중 가스 농도를 감시계로 측정한다.

사용 경기관: 암모니아 - 3La

THE GRAPHENE[®] YARN THERMAL REGULATION

Graphene is :

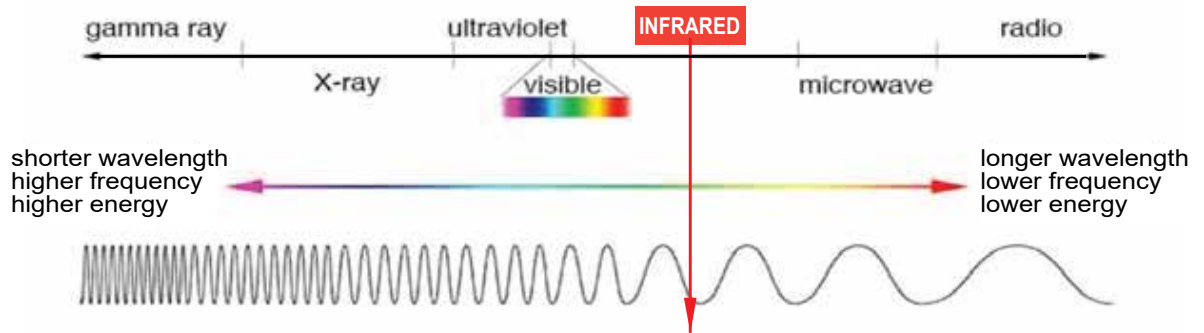
- Extremely effective thermal conductor materials
- Effective absorption & emission of Far-Infrared Radiation
- Can provide both heating and cooling properties
 - Heating when you need it
 - Cooling through Heat Dissipation



THE GRAPHENE[®] YARN- FAR INFRARED RADIATION

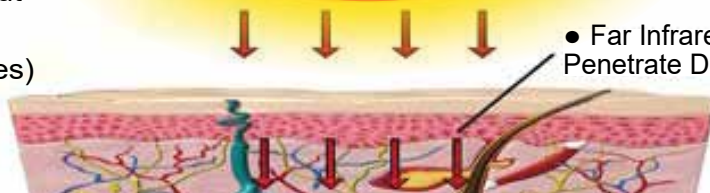
Far Infrared Mechanism

Graphene emits Far Infrared Ray which is compatible with the human body and penetrates easily.



Far Infrared Heat Energy

- Vibrational Resonance Pushes Out Toxins Stored in Fat Cells
- Far Infrared Stimulates (Activates) Water Molecules
- Improves Blood Circulation & Metabolic Function

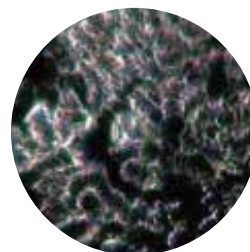


- Far Infrared Waves Penetrate Deeply into Tissue

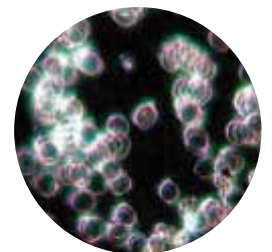
Health Benefits of Far Infrared Ray

- Detoxifies the human body
- Helps chronic fatigue
- Increase blood circulation & oxygen, good for health, no electromagnetic radiation.
- Reduce pain & stiffness (reducing muscle spasms, muscle soreness, and relief for rheumatoid arthritis)
- Relieves back pain symptoms
- Boosts the human body immune system

BLOOD CIRCULATION & OXYGEN



Normal fabric



The Graphene fabric

THE GRAPHENE[®] YARN THERMAL REGULATION

THE GRAPHENE[®] YARN- FAR INFRARED RADIATION TEST RESULTS

GO/PET Fabric & Yarn – FIR Test

Sample: Graphene/PET Yarn & Fabric
 Test Agency: KIFA Evaluation Institute
 Test Date: 11/12/2020
 37°C Far-infrared Emissivity: 0.886

GO/PA Fabric & Yarn – FIR Test

Sample: Graphene/PA Yarn & Fabric
 Test Agency: KIFA Evaluation institute
 Test Date: 5/2/2019
 37°C Far-infrared Radiation : 0.894




THE GRAPHENE[®] YARN THERMAL REGULATION

THE GRAPHENE[®] YARN- HEAT RETENTION

- In cold conditions, most body temperature is also lost by radiation. Perspiration then stops and conduction increases.
- Special Non-woven, Down or Fabric in platted construction form reduce the conduction effects on the outer layer while preserving the radiation heat absorbed and emitted by the Graphene located on the inner layer.
- The capability of Graphene to absorb body radiations and emit Far-Infrared enhances the heat retention properties of winter garments if located closest to the skin.

Outer Layer	100% - PES
Inner Layer	50% PES / 50%Graphenus

THE GRAPHENE[®] YARN- HEAT RETENTION TEST RESULTS



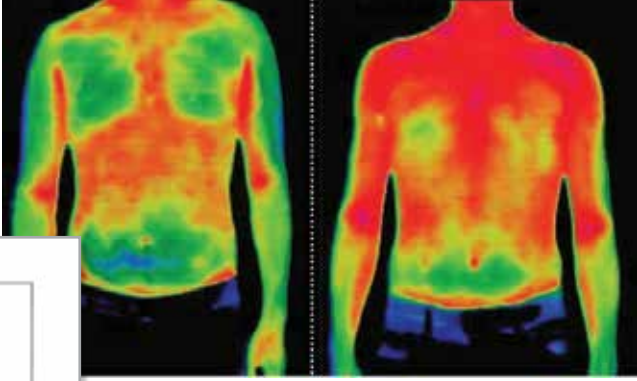
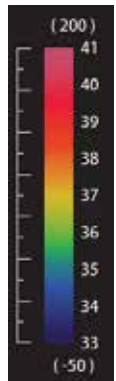
KIFA 시험보고서
대한민국원격시험협회
부설 한국원격시험용평가기구원

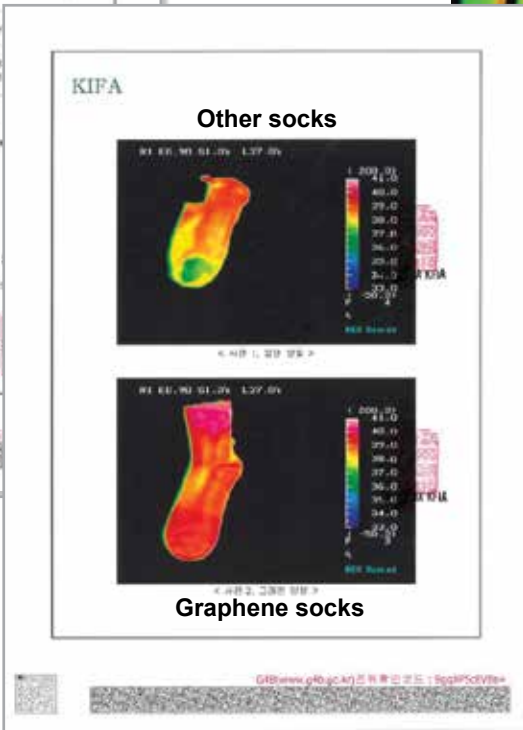
시험성적서

시험종류: 열차폐시험

시험대상: Graphene Yarn

시험결과: 열차폐율 12.7%



Other socks

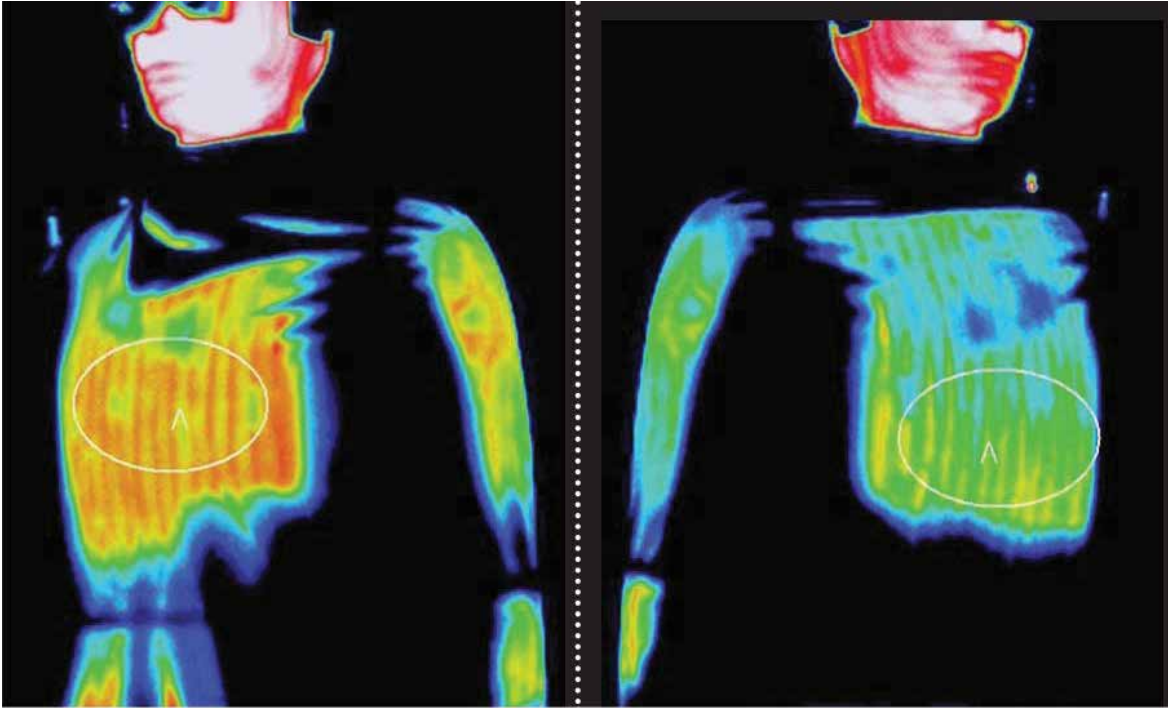
열차폐율: 12.7%

Graphene socks

열차폐율: 12.7%

THE GRAPHENE[®] YARN THERMAL REGULATION

THE GRAPHENE[®] YARN- COOLING TEST RESULTS

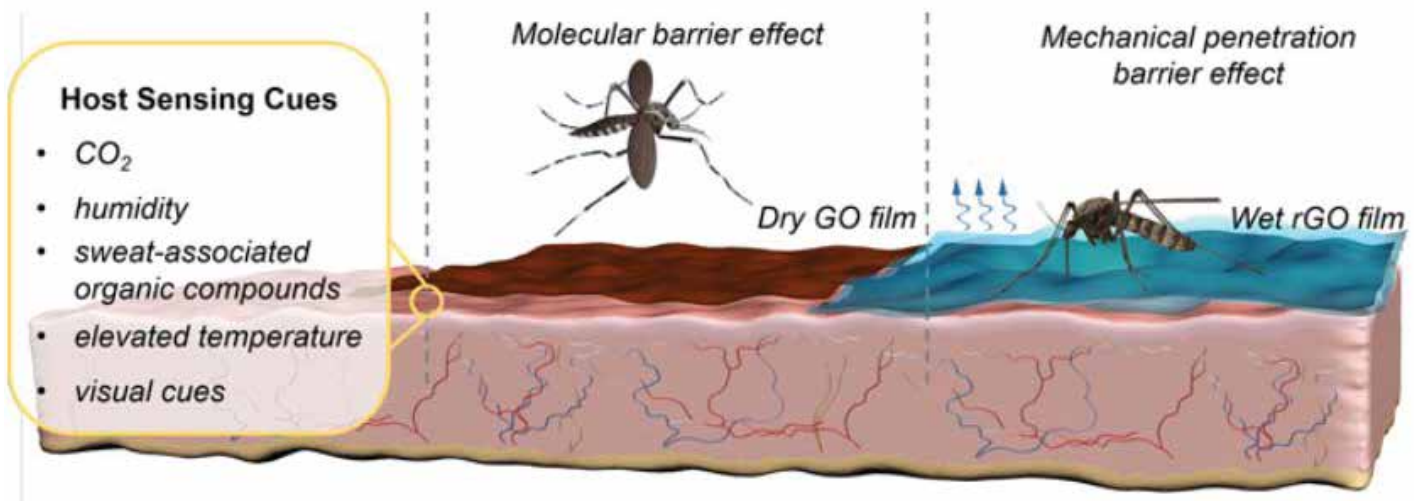


Cooling of GO/PA Fabrics (@GO: 50.0%) is improved by a factor of 1.5

THE GRAPHENE[®] YARN MOSQUITO & MITE REPELLENCY

For five minutes, the researchers gave 100 mosquitoes access to a human arm. The insects did not bite when the arm was protected by dry graphene oxide (GO) film plus cheesecloth. With the cheesecloth only, there were plenty of itchy bites.

(C. Castilho and R. Hurt/Brown Univ.)

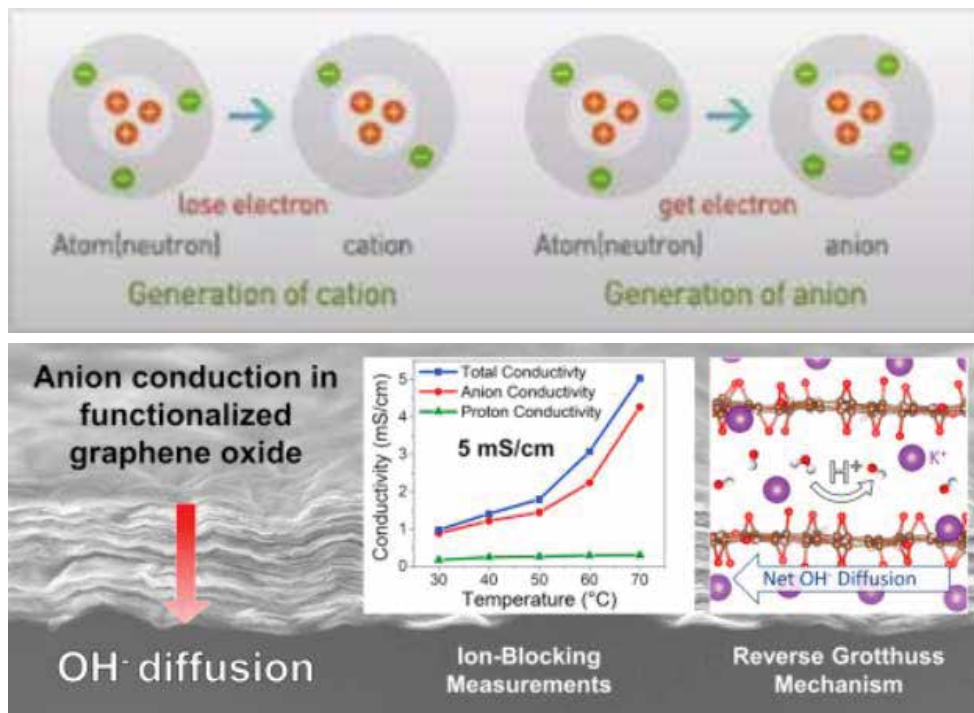


These results showed that wet rGO was the mechanical barrier. The mosquito lands on human skin but cannot penetrate it. Dry GO, on the other hand, blocks some (smelly) chemicals that our skin emits with sweat. These chemicals help mosquitoes find nearby people to bite. Other attractants include heat, humidity, carbon dioxide and visual cues.

(Muchun Liu, C. Castilho and R. Hurt/Brown Univ.)

THE GRAPHENE[®] YARN THERAPEUTIC BENEFITS

- Anions are negatively charged atoms or molecules in multi-layers of graphene.
- Negative ions- called “vitamin in air”- are associated with improvements in mood and physical health.
- Researches conducted in the last decade support that negative ions have a net positive effect on health.



THE GRAPHENE[®] YARN THERAPEUTIC BENEFIT TEST RESULTS

- Samples Composition: **THE GRAPHENE[®] GO/PA Fiber**
- A non-functionalized Polyamide fiber has “0” anions as THE GRAPHENE[®] sample measures 500 pics/cm³
- A result above 500 shows a significant concentration of anions which has been associated with improvements in mood and good health.

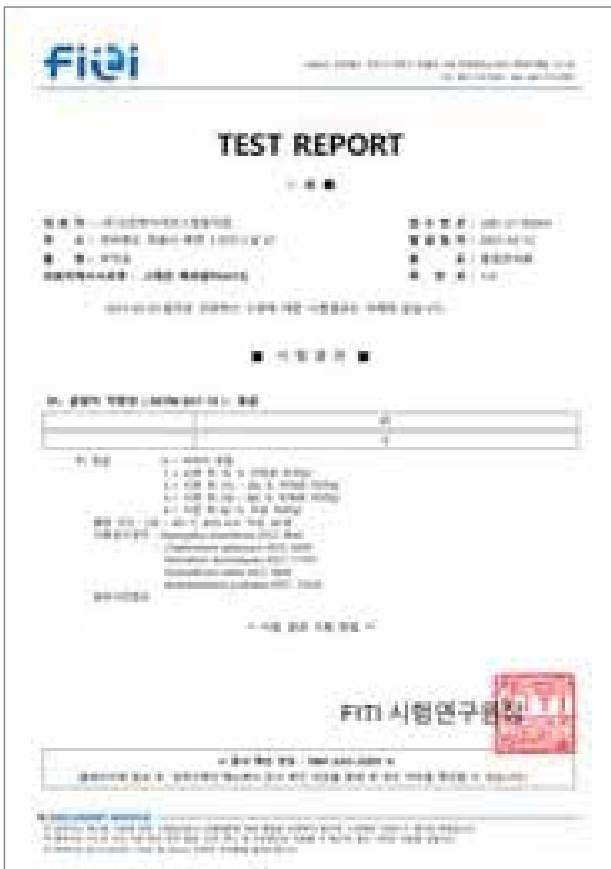
No.	Test Item	Test Method	Limit	Result
01	Concentration of anions, pics/cm ³	GB/T 30128-2013	-	590

THE GRAPHENE[®] YARN – ANTIFUNGAL

THE GRAPHENE[®] YARN ANTIFUNGAL MECHANISM & TEST RESULTS

For antifungal activities, Graphene is to target the spores in three steps:

1. Depositing on the surface of the spores
2. Inhibiting water uptake
3. Inducing plasmolysis



- Fungi strains (6) tested:
- *Aspergillus Brasiliensis* ATCC 9642
 - *Aspergillus Niger* ATCC 6275
 - *Chaetomium Globosum* ATCC 6205
 - *Penicillium Funiclosm* ATCC 11797
 - *Trichoderma Virens* ATCC 9645
 - *Aureobasidium pullulens* ATCC 15233

THE GRAPHENE[®] YARN CERTIFICATES

• FDA – Graphenetex Fabric



FDA/OEKO-TEX

• KC Certificate approved



• Skin Irritation Test certified by
 PNK Skin Research Center : Dec. 31, 2020
 ◦ Sample: GO/PET, GO/PA, GO/PP Fabrics
 – “ No Irritation”

시험항목	시험결과	평가기준
1. 자극시험	1. 자극시험 결과: 피부 자극 없음	1. 자극시험 결과: 피부 자극 없음
2. 피부 자극 시험	2. 피부 자극 시험 결과: 피부 자극 없음	2. 피부 자극 시험 결과: 피부 자극 없음
3. 피부 자극 시험	3. 피부 자극 시험 결과: 피부 자극 없음	3. 피부 자극 시험 결과: 피부 자극 없음

THE GRAPHENE[®] APPLICATIONS

The Graphene, is at the forefront of fashion and technology, reimagining the future with the 2D material, graphene. This revolutionary substance, blessed with properties outperforming all other materials, is catalyzing a transformation in the apparel industry.

By harnessing the extraordinary qualities of graphene, we're crafting apparel that provides wearers with unparalleled experiences. Beyond clothing, we're broadening our reach into accessories and household items. Traditional apparel was mainly focused on providing protection and style, but The Graphene's offerings elevate this paradigm.

Our products harness graphene's superior thermal conductivity to regulate body temperature, while its strength and durability extend the life of the garment. Additionally, with the potential to incorporate graphene into a vast array of existing fabrics and clothing, the scalability is enormous.

APPAREL

- Top& Shirts
- Underwear
- Pants
- Workwear
- Shorts& Trousers
- Firefighting suit
- Hoodie&Jackets
- Medical Gown
- Denim
- Sleepwear/
- Outerwear
- Loungewear
- Active Wear
- Uniform



ACCESSORIES

- Hat
- Gloves
- Shoess
- Socks
- Bag
- Knee pad/brace
- Wigs
- Wrist pad/brace
- Mask
- Scarf

HOME GOODS

- Bed Cover
- Pillow
- Blanket
- Mattress



REAL WORLD EXAMPLES THE GRAPHENE[®] MILITARY LINE

GRAPOLY(GO/PET) Composite Fiber Military T-Shirt Prototype



GRAPOLY(GO/PET) Composite Fiber Military Underwear Prototype



GRAPOLY(GO/PET) Composite Fiber Military Socks Prototype



REAL WORLD EXAMPLES

Graphene (GO)/PET Composite Fiber T-shirt Development Prototype



GRAPOLY (GO/PET) Composite Fiber Sock Wrist/Knee Pads Development Prototype



GRAPOLY(GO/PET) Composite Fiber Yoga Athleisure Prototype



REAL WORLD EXAMPLES

GRAPOLY (GO/PET) Composite Fiber Nano Pi-Pi/PI Fiber and Padding Development Prototype



GRAPOLY Composite Fiber Bedsheets/Sleepwear/Blankets Prototype



GRAPOLY Composite Fiber Functional Bedding Prototype



REAL WORLD EXAMPLES

GRAPOLY Composite Fiber Non-woven mask and filter Prototype



GRAPHENE CERTIFICATE HANG TAG

Our HANGTAG that certifies the efficacy of graphene, will further increase the value of your brand. Apparel products applied with GRAPHENE are recognized as products with high value. This provides opportunities for manufacturers to increase profitability and has a positive impact on the industry as a whole. In addition, if apparel products applied with GRAPHENE become more popular, interest in developing products using GRAPHENE will increase, which can also contribute to pioneering new markets..



ANTI-STATIC

ANTI-BACTERIAL

UV PROTECTION

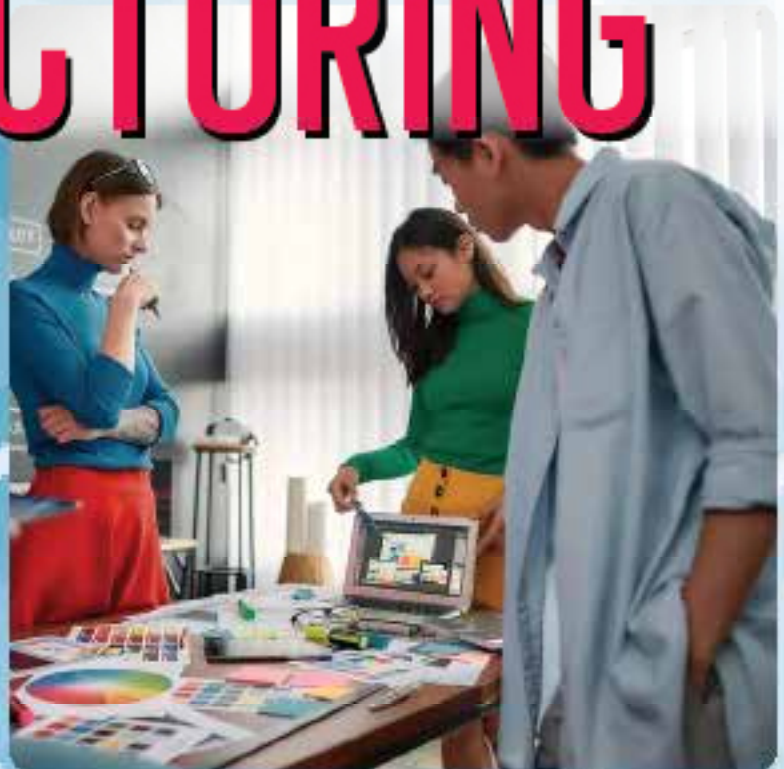
FIR
FAR INFRARED RAY

THE **GRAPHENE**

THE GRAPHENE is an advanced composite fiber that features a wide range of benefits originating from the Graphene itself such as: UV protection, anti-bacteria, excellent thermal, anti-static, deodorizing, eco-friendly, far-infrared effect, and more. These features last the lifetime of the yarn and are not degraded by washing. No harmful chemicals or additives are included in THE GRAPHENE.

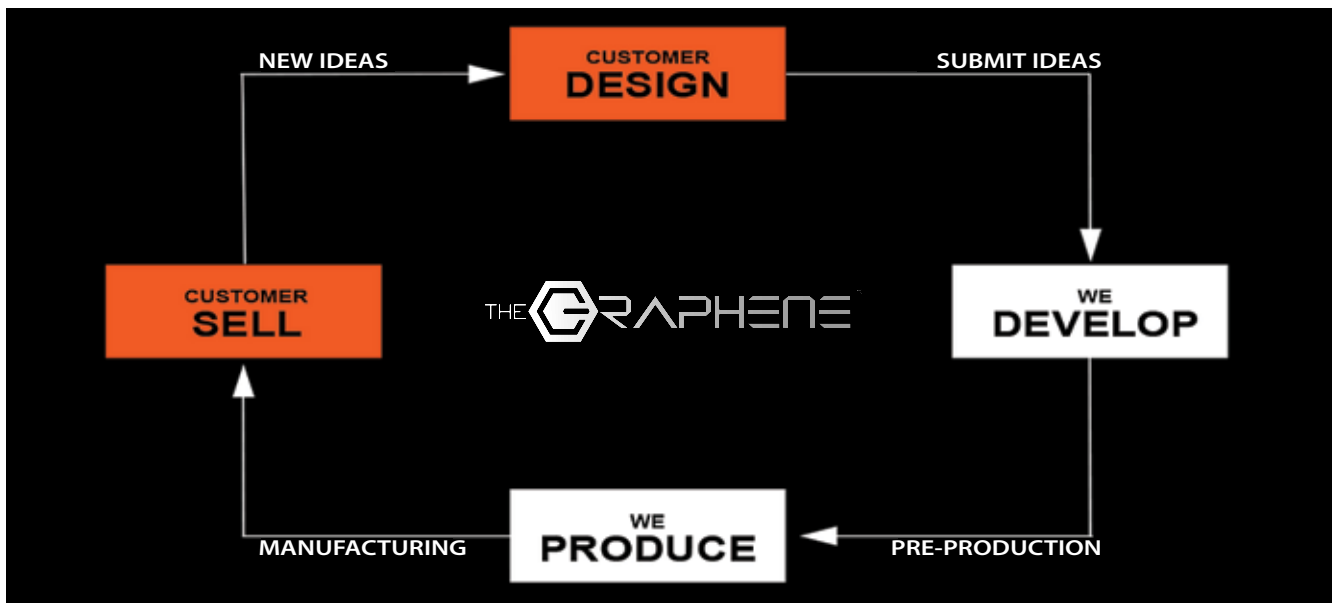


MANUFACTURING



FULL SERVICE MANUFACTURING

The Graphene is a brand launched by CCL Apparel Manufacture with a 40-year tradition of producing general clothing and miscellaneous goods. Our 40 years of manufacturing experience has given us the knowledge and skills essential to learning how to utilize graphene effectively. In doing so, we are revolutionizing the apparel industry and providing the wearer with an experience like never before. With our own know-how derived from long experience, we will meet the needs of our customers, such as price, quality, and speed. THE GRAPHENE provides full-service private label manufacturing. We offer Design, Development, Production and Additional Consultation services. We have a global sourcing and network worldwide, from production in the United States to Central and South America, Asia and even Africa. We have offices for design, development, and pre-production in the US and Korea, and production in the US and Central and South America. From the moment a customer makes a request to the moment the finished product is delivered to the customer, we carry out each step in a professional and meticulous manner. The best team is ready to meet the diverse needs of guests.



WHY RUN WITH THE GRAPHENE?

We proudly produce high-quality, American-made clothing, partnering with some of the finest clothing contractors and suppliers in Los Angeles.

Our extensive network of factories, suppliers, and vendors equips us with the capability to develop and manufacture any style of clothing product or design, ensuring top-tier quality for every item.

We place great importance on customer satisfaction and superior product quality. Our mission is to execute every development and production program flawlessly, with our ultimate goal being 100% satisfaction for all customers.

We strive to save you time, money, and unproductive struggle. Leveraging the ultimate efficiency of our global factory and network, we make the clothing development and production processes easy and cost-effective, all while maintaining reasonable prices.

GRAPHENE PRODUCTION OPTION

Graphene yarns are normally produced in Korea and China. Please refer to the production options outlined below.

Yarn Sourcing

This is a production option suited for the premium lineup seeking both American-made quality and rapid delivery. One of the key benefits is the ability to experiment with various structured fabrics in collaboration with local textile mills utilizing our yarn.



Fabric Sourcing

Option to import fabric and produce in the United States or Mexico. For fast delivery and small quantity production. If you opt to cut the fabric in the United States and perform the sewing in Mexico, you could reap tax-free benefits under the 807 program.



Finished Products Sourcing

We operate factories in Central and South America, Asia and Africa. This option can be tailored to your needs, considering factors such as price, quantity, and delivery time.

PRODUCT DEVELOPMENT

Product development lies at the heart of our expertise. This process encompasses a series of carefully coordinated stages, from the initial design phase that transforms ideas into tangible products, to the production of graphene yarn, the garment manufacturing process, and the final product quality verification. We're committed to continuous research and refinement at every step to ensure we deliver only the best products.

Understanding and accurately reflecting our customers' desires in the final product is a fundamental part of this process. It's the first and most crucial phase in our entire operation, as identifying and addressing any inefficiencies early on allows us to prevent waste and ensure a streamlined production process.

Our experienced teams, having collaborated with top-tier brands, attentively cater to our customers' needs, delivering their utmost effort. We bring to the table our vast resources, comprehensive experience, and diverse production options to help you realize your objectives. Importantly, we continuously refine our products based on customer feedback. Truly hearing and understanding our customers' voices is paramount in our product development process at The Graphene. Our commitment to this principle enables us to create products that not only meet but exceed our customers' expectations. .



STRATEGY

Ready to develop your idea into a working prototype?



SOURCING

We source materials from a network of trusted suppliers to meet project requirements



TECHNICAL DESIGN

Flat sketch showing sample product construction and material placement



PATTERN DRAFTING

Patterns are the "molds" to cut each fabric piece required to sew a product



SAMPLING

Sample products are created to test performance and quality



COSTING

Production costs are determined after product is developed and sample is approved

BRANDING APPLICATIONS

Leveraging over 40 years of apparel manufacturing experience, THE GRAPHENE offers a private label service that collaborates with various brands to develop and manufacture unique graphene-based products. This service allows you to craft bespoke products that carve out a distinctive market position for your brand.

Our Private Label Service covers the entire process from product development, manufacturing, quality control, to packaging and shipping. Thus, your brand can penetrate the cutting-edge realm of graphene-based apparel, delivering unique value to customers. With The Graphene's Private Label Service, your brand will become the leader in graphene-based apparel products. We invite you on this journey to create an innovative future together.



SCREEN PRINTING



EMBROIDERY



HEAT TRANSFER



TRIM



GARMENT SUPPLY



CUSTOM PACKING

PRE-PRODUCTION

Product manufacturing is more than just design and production. For a successful launch, diligent preparation is vital, which is encapsulated in the pre-production stage. This is where product development ideas materialize and all necessary arrangements are made to bring them to life. At THE GRAPHENE, we finalize product design, prepare for the graphene yarn manufacturing process, and carry out QA tests and verification during this stage. Moreover, we plan for production, secure the necessary materials and resources, and more. This comprehensive pre-production phase ensures a solid foundation for the ensuing production process.

During this phase, we meticulously examine fabric, trim, supply, and various applications, while also checking essential production elements such as fit and grading. Leveraging our extensive global network, we optimize resource usage, make informed choices, and gear up for production. Beyond marking and grading, this stage also involves finalizing the production order volume as well as the quantities and prices of materials. This thorough preparation ensures a seamless transition to the production phase.



FIT CONFIRM

The best pattern maker works to provide the best customize fit.



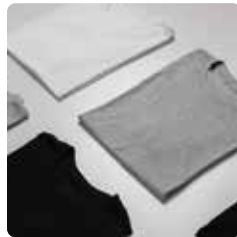
FABRIC CONFIRM

We ensure product consistency by commissioning the very factory that will handle the actual production



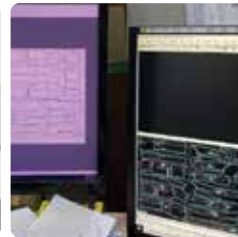
TRIM CONFIRM

We ensure product consistency by commissioning the very factory that will handle the actual production



PP SAMPLE CONFIRM

PP sample is a pre-production sample. This is the step to confirm the actual product to be produced.



OPTIMIZE

Material and labor costs are optimized before launching production to avoid costly mistakes



PRODUCTION TECH PACK

This is a manual for perfect production. It is made as detailed and meticulous as possible to avoid mistakes in the actual production.

WHY IS TECH PACK SO IMPORTANT?

Saving time & money: A tech pack is crucial for your product as it ensures the garment produced during the sample stages and final production aligns with your precise specifications, minimizing errors. As you begin working with a manufacturer, you'll likely review various sample sets to confirm satisfaction with the end product. The tech pack guarantees that these samples meet your exact requirements, preventing unnecessary time and expense in reproducing incorrect versions.

Cost of the garment: the details within a tech pack will help the manufacturer to determine the cost per unit as they can breakdown the cost for each component that you've asked for. It will also help the manufacturer to know how long it will take to make depending on the complexity of the product and the finishes required. Using your tech pack will allow you to compare costs from different manufacturers as you can accurately see the breakdown they are charging you.

Quality control: tech packs are also key to ensuring quality control and consistent sizing across your range. A good tech pack will detail the measurements you need for each size to ensure you are delivering the best product for your customers.

Security: It's common to establish a contract detailing the relationship and responsibilities between you and the manufacturer. It's essential to include a clause stating that all orders and shipments should conform precisely to the final approved "golden" sample's specifications. This way, if there are any unsolicited variations or changes to the product (in fabrics, trims, measurements, etc.), the manufacturer would be held accountable and could potentially face penalties.

PRODUCTION

Our graphene-based apparel products are subject to rigorous production control processes. This is our commitment to ensuring product quality and prioritizing customer satisfaction. Our production management encompasses various stages, from raw material oversight to final packaging, we steadfastly uphold our rigorous quality standards.

Production unfolds within our global network of factories, with quality control being a cornerstone of our production management strategy. Our network emphasizes efficiency and safety, harnessing the latest manufacturing technologies and systems. This approach empowers us to deliver quick responses and high flexibility without compromising quality.

At THE GRAPHENE, we're crafting the future of graphene-based apparel products. This commitment is embodied in our production management strategy, meticulously designed to not only meet but exceed our customers' expectations. We strive to fulfill this aim through incessant innovation and customer-centric production management. We acknowledge our production strategy's vital role in upholding THE GRAPHENE's commitment to superior products. As we tirelessly explore the potential of graphene-based apparel, we never compromise on quality and reliability.



COMPLETED PRE-DEVELOPMENT ASSETS

- Production Markers
- Sew-by Sample
- Tech Pack



FABRIC MANUFACTURING

Fabric manufacturing is facilitated by securing verified textile mills in the region where CMT (Cut, Make, Trim) takes place, making production management more efficient.



TRIM & SUPPLY PRODUCTION

Through global sourcing and meticulous quality checks, we consistently supply products of the highest quality.



CUTTING & SEWING & APPLICATION

Production management is meticulous and experienced at every stage, facilitated by verified factories.



TRIM & FINISHING & PACKAGE

Meticulous finishing is a great way to make the best products even more valuable.



DELIVERY

We offer a variety of options to suit your price and delivery date.

COLLABORATION

We look forward to collaborating with all partners with innovative ideas in the world of graphene-based apparel. If you have creative ideas but lack the experience or infrastructure to realize them, partnering with us can provide the solution. Drawing on over 40 years of apparel manufacturing experience and deep knowledge of graphene technology, we can help turn your ideas into reality.

Our COLLABORATION program involves working with various companies and individuals to develop and manufacture their unique graphene-based apparel. Through this program, we combine your ideas with our expertise and infrastructure to create products that offer unique value in the market.

When your ideas meet our technological prowess, we can create amazing results. Discover how your idea can become a reality through collaboration with the Graphene. By combining your ideas with our experience, we invite you on a journey to co-create the future of graphene-based apparel.

Let's imagine how your creative ideas can lead to innovation in the world of graphene-based apparel.

With over 40 years of industry experience, THE GRAPHENE possesses a deep understanding of graphene technology and expertise in apparel manufacturing. This enables us to extend a hand to individuals or companies who have creative ideas but lack the experience and infrastructure to make them a reality.

Our COLLABORATION program is a shared journey of bringing creative ideas to life. This program involves integrating your unique concepts with graphene technology to create innovative and unique products. Your ideas combine with our expertise and excellent manufacturing infrastructure to create products that offer exceptional value in the marketplace.

From the initial stages of ideation, through product design, graphene yarn manufacturing, all the way to final product creation and quality verification, our expert team collaborates with you every step of the way.

IDEA PROPOSAL

Individuals or companies with creative ideas submit them to us. At this stage, basic information about the product concept, design ideas, and features and characteristics of the product is needed.

PROJECT ASSESSMENT

THE GRAPHENE's expert team reviews submitted ideas to evaluate their feasibility and potential market value.

PROJECT CONFIRMATION

Once the idea is approved, we establish a detailed plan based on mutual agreement to proceed.

PRODUCT DEVELOPMENT

Our engineers and manufacturing specialists begin to outline a concrete plan to bring the idea to life. This stage involves establishing detailed plans for graphene yarn production, product design, and the manufacturing process.

MANUFACTURING AND QUALITY ASSURANCE

Once product development is complete, the manufacturing process begins, utilizing The Graphene's superior manufacturing infrastructure. Throughout the production, our quality control team rigorously ensures the quality of the product, striving for the best possible outcome.

PRODUCT LAUNCH

Once the final product is completed and has passed quality assurance it is launched into the market.

The GRAPHENE stands ready, equipped with a suite of services to facilitate and support a successful product introduction.

THE  **GRAPHENE**[®]
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presented by



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