GRAPHENE-PRISM
“Catsul”

Natural leather-based high fashion & retroreflective shoes

The world's first secure source technology
The retroreflective performance is excellent even in the rain
Casul16-d,gray / Sneakers
When exposed to the shoes color car lights at night

Catsul16-d,gray /Sneakers
When exposed to the shoe color car lights at night
When exposed to the shoe color car lights at night

Casul16-d, gray/sneakers
When exposed to the shoe color car lights at night
Graphene Cores Ltd. has completed the products development, through a five-year period of specialized research, since it was founded in August, 2011 and conversed to a corporation in June, 2016 in order to try to full-scale entry to the markets in earnest. Thus, our company have strengthened the industrialization basis over a relatively long period experiencing research and development ⇒ acquisition of intellectual property rights ⇒ acquisition of material source technology ⇒ market advance-phase.

Accordingly, the products for entry to the markets are manufacturing for sale of the advanced materials of Prism leather and shoes made use of these materials.

These products, in response to light, are to form the appearance of the creative textures with a fashion sense, and to clearly identify one’s position in the road at night by reflecting the intense light through on the car lights, hence this prism- retroreflective- leather product builds up the safety in the road at night, to this end our company aims for the business that manufacture and sell the products like shoes etc.

Our company is equipped with manufacturing prism-leather materials and design systems as the field of a core technology, and the manufacture of finished footwear in the general field of industry is in a typical configuration of a slim structure that is outsourcing business structure.  

As of June, 2016, prism shoes are in the procedure of "Katseul" launching operation.

The patent rights of most relevant technologies have been acquired.
History

- The research & development of Graphene Cores through a five year since the company was founded in August, 2011
- Conversion to the corporation in June, 2016: CEO of Graphene Cores is Jo Jong Soo

R & D Results

1) Manufacturing method of Nano-composite resin etc., for coating of steel pipes coating, co-development of three cases cooperated with T Inc., Public Procurement Excellence Technology Certification
3) International patent registration of ultra-thin carbon heat diffusion sheet manufacturing method
4) Patent registration of manufacturing technology of graphene
5) Trademark registration
6) Patent application for graphene production method of prism leather
   6-1) Development of mass production methods for prism leather manufacturing
   6-2 Under launching operation of "Katsel" the title of prism shoes
Intellectual Property (Patents)

*METHOD FOR MANUFACTURING PRISMATIC RETRO-REFLECTOR USING GRAPHENE AND PRODUCTS WHICH IT USES
Republic of Korea Intellectual Property Office

*METHOD FOR MANUFACTURING ORGANIC SOLUTION COMPRISING GRAPHENE AND ORGANIC SOLUTION BY THE SAME
Republic of Korea Intellectual Property Office
Patent No. 10-1625023

*Trademarks Patents Registration Republic of Korea Intellectual Property Office Number. 40-1179947

*ULTRA THIN FILM TYPE THERMAL DIFFUSION SHEET AND MANUFACTURING METHOD THEREOF
Republic of Korea Intellectual Property Office
Patent No. 10-1535472-0000 /PCT International Patent
Product Introduction

Prism natural leather "Catsul" is an advanced and functional leather fabrics response to the light, first developed by Graphene Cores in the world.

Or, the products of shoes, bags, etc., which are manufactured by using the prism leather.

The "Catsul" forming a prism structure to natural leather surface in response to light is to form the appearance of the creative fashion in the regular light (light in the common life), and to have safety function to prevent the accident by clearly identifying one’s position at night by reflecting the intense light through on the car lights.

The product, usually distinctive fashion shoes, is useful as a stabilization plan for safety in the road at night. Young people, attending scramming school, especially late at night, can be more beneficial for shoes.

There are not only groups of similar products, but also the retroreflective zones by using a plastic embossing or using a fine glass beads are dropped, hence the textures are low and there is a limit to texture easily be damaged or only partially used such as a poor-durability logo.

In contrast with these products, this product is the creative product that can be applied to the entire structural durability better than a pure natural leather by any combination of three-dimensional prism surface leather shoes and leather applied to a high-quality, high-performance prism.
Products (shoes - Catsul)

- **Fashion Sense**: Exterior own creative personal fashion sense
- **Functional**: Road at night, to generate the intense reflected light in the car lights thereby whether their positions on the driver.
- **Convenience**: And feeling good wear my sex contamination, even if the surface is contaminated with water can also wipe tissue gently.
- **Durability**: The excellent wear resistance and strong contributor quality.
Night cognitive tests

"Catsul" seems clearly visible to the driver in white. "Catsul" even if the person is not looking good looks

(Picture taken in the car)
The structure of the prism leather "Catsul"

* Graphene combines high polymer and elastomer prism
Natural leather is Three-dimensional covalent bond to the silver layer, and permanently integrated The combined.

Structural Drawings

Real (Prism leather)

Natural leather layer

Patented Technology
Comparative Experiment

* General life conditions

* When you meet the changing light in the darkness
Compared to other products

Graphene prism leather

Natural leather texture - Applicability and durability

VS

Nylon fiber texture

Glass bead

Plastic film texture

Micro prism film

Glass and plastic film breaks easily
Safety Science “Catsul”

* Safety Science leather prism prism to recognize pedestrians to shine an intense reflection occurs when light car headlights at night walking shoes "Catsul"
Product Composition

- Children - shoes for adults - for youth
- Shoes - Men
- Fashion sneakers, youth safety emphasis
- Running shoes, hiking shoes, cycling shoes, etc.
- bag
# DATA SHEET

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**Characteristics:**
- Excellent fashion sense
- Good durability
- Rain in excellent retroreflective
- Hand-made shoes