

Technology Offer

A Korean company offers eco-friendly and non-toxic artificial leather manufacturing technology by a new waterborne method

Summary

A Korean company has developed waterborne process for eco-friendly synthetic leather production without the use of VOCs (Volatile Organic Solvents), which are known to have harmful effects on human body. The innovative production process helps to achieve improved material property and reduced production cost. The company wishes to offer their production technology to corporations that are interested in artificial leather production under a commercial agreement with technical assistance.

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Reference	TOKR20171101001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/0025c786-e7bc-4a2a-ae1a-744bf41ce8d3

Details

Description

Solvents such as DMSO, DMF and DMAc have been frequently used to dissolve resin for industrial purposes. However, all those solvents are not acceptable nowadays for industrial applications due to the strengthened regulations on VOC (Volatile Organic Compounds) and toxicity. VOCs are organic chemicals that have a high vapor pressure at ordinary room temperature. Chronic exposures to VOCs are known to cause cancer and/or liver & kidney damage. Also, it may make symptoms worse for people with asthma.

Since its establishment in 2001, this Korean company has been supplying industrial machinery to many other reputable companies in the industry of paper, tissue, non-woven and chemical/non-ferrous materials.

The company has recently developed innovative ways to produce synthetic leather without the use of harmful chemicals. Every step of the manufacturing process is waterborne and Green Solvents (environmentally friendly solvents like alcohol) are employed instead of VOCs.

The company has the chemical and equipment technology to prevent the concentrating phenomenon of the fiber structure drifting on both sides when the waterborne resin is dried. In addition, the company holds the excellent surface treatment for leather called eco-friendly waterborne soil release finish technology, which is effective in stain resistance and meets the

standards of artificial leather for children's playmats.

The company's waterborne microfiber technology is also excellent in light-stability and frictional resistance. The company has water-based flame retardant technology that meets the standards of artificial leather for interior parts of automobiles and ships, and consumer goods such as briefcase, shoe sole and etc. The technology and its machine are newly developed, and the company wishes to offer the equipment and the know-how related to the technology to other leather manufacturing companies under a commercial agreement with technical assistance such as training of a technician regarding the installation and operation of the manufacturing equipment.

Advantages and Innovations

Harmful substances such as formaldehyde, benzene, toluene, ethyl benzene, xylene, styrene, and cadmium cannot be found in the artificial leather made by the company.

The dispersion stability of resin and the color development have been highly improved through the Korean company's following activities: Designing the components and tissues of application(fabric), applying waterborne synthetic resin method (without using DMF, DMAC, DMSO) and green solvent, and using water-based toner.

The new process not only enables to achieve improved material property of finished products, but also reduced production cost by minimizing the chemical waste disposal.

Stage of Development

Already on the market

IPR Status

Exclusive Rights

Profile Origin

COSME

Keywords

Technology

03004005 Man-made fibres

Market

09004003 Textiles (synthetic and natural)

NACE

C.28.9.4 Manufacture of machinery for textile, apparel and leather production

Network Contact

Issuing Partner

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

Textile and Fashion

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

2001

Turnover

1 - 10M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English

Client Country

South Korea

Partner Sought

Type and Role of Partner Sought

- Type of partner sought:
Enterprises

- Specific area of activity of the partner:
Textile industry

- Task to be performed:
Manufacture of artificial leather

Type and Size of Partner Sought

SME 11-50,SME <10,SME 51-250

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments

synthetic leather 1.jpg



synthetic leather 2.JPG

Applications

- Briefcase



- Shoe Upper



- Car seat, Door-Trim



Technology Offer

The design and development of application specific Photonic Integrated Circuits

Summary

A Dutch SME is specialized in the design and development of application specific Photonic Integrated Circuits (PICs). PICs provide functions for information signals imposed on optical wavelengths. Most important advantages of integrated photonics are new functionalities for signal processing, less use of energy, high speed signal processing, robust and compact designs. The SME is interested in commercial agreements with technical assistance to develop application specific PICs.

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Details

Description

A Dutch SME is a globally working leading design house for Photonic Integrated Circuits (PICs) fabricated from a variety of material technology platforms like Silicon, Indium Phosphide, Silicon Nitride, Silica and Polymers. With their partners the Dutch SME is leading the development in making PICs accessible to businesses, research institutes and universities.

The fabrication techniques for PICs are similar to those used in electronic integrated circuits in which photolithography is used to pattern wafers for etching and material deposition. Unlike electronics where the primary device is the transistor, there is no single dominant device. The range of devices required on an optical chip includes for instance low loss interconnect waveguides, power splitters, optical amplifiers, optical modulators, filters, lasers and detectors. These devices require a variety of different materials and fabrication techniques, Depending on the desired specifications choices are made for the (mix of) material technology platforms.

Most important advantages of PICs are:

- The multifunctional, compact, highly integrated, robust, high-speed, very accurate, very energy-efficient design of the devices.
- The possibility of smaller series production in multi project wafer (MPW) runs and the low cost of prototyping and fabrication.

The Dutch SME develops and designs Application Specific Photonics ICs (ASPICs). Tested prototypes are supplied based on customer specifications and ready for system testing. In other cases new applications are co-developed, up to product lines, in close cooperation with long-term customers.

Options for obtaining ASPICs are custom foundries or multi-project wafer (MPW) shuttle runs at generic foundries. The latter reduces prototyping cost by an order of magnitude. Early on in the design phase packaging options and ramp up needs where applicable are taken into account. The Dutch SME derisks and speeds up ASPIC development projects with a focus on tailored solutions for successful ASPIC integration into applications.

The Dutch SME is interested in commercial agreements with technical assistance to develop application specific PICs for companies, start-ups and/or research institutes.

The Dutch SME offers the following services:

- Translation of applications into PICs.
- Prototyping of PICs.
- PIC technology comparison.
- Mask design.
- Licensing of intellectual property blocks.
- Selection of the foundry, both Multi Project Wafer (MPW) foundries and custom foundries.

The partner should bring in the application using the Application Specific Photonic Integrated Circuit (ASPIC). Typical market applications where ASPICs are used are:

- Telecom.
- Datacom.
- Sensing.
- Imaging.
- Metrology.
- Microwave photonics.
- Bio photonics.

Advantages and Innovations

On this moment worldwide there are not many design houses for application specific photonic integrated circuits (ASPICs).

Depending on the design of the optical chip, the Dutch SME together with the customer finds the best PIC Technology and foundry for the development and production of the photonic integrated circuit.

The advantages of the Dutch SME are:

- Experience with the design and development of more than 300 PICs.
- Offering a wealthy library with building blocks for PIC-design, which minimizes risk, speeds up design and reduces development costs.
- Participation in more than 25 multi project wafer runs on different technology platforms used by different foundries.
- Licensed design modules provide beginner and expert user functionality. Modules are foundry compatible with more than 10 foundries. Custom foundries can be added and benefit from reuse of proven design logic.
- For the production of the PICs experience with more than 20 foundries worldwide.

Stage of Development

Already on the market

Comments Regarding Stage of Development

First PICs are on the market. However PIC-based applications are very new. The technology phase of the lifecycle of the current PICs can be compared with stage of life of electronic

integrated circuits of 25 years ago. The production of electronic integrated circuits has developed enormously. It is the expectation that for integrated photonics a similar growth will follow in coming decade(s).

IPR Status

Design Rights

Comment Regarding IPR status

Beyond standard libraries of multi project wafer (MPW) foundries the Dutch SME offers licensed design modules compatible with MPW platforms.

The way of licensing is an analogue of licensing designs in the electronic chip making industry: By licensing a design multiple times, an intellectual property (IP) block licensor spreads the cost of development among multiple chip makers. IP cores for standard processors, interfaces, and internal functions have enabled chip makers to put more of their resources into developing the differentiating features of their chips. As a result, chip makers have developed innovations more quickly.

Profile Origin

Private (in-house) research

Keywords

Technology

01002008	Optical Networks and Systems
01002010	Printed circuits and integrated circuits
01002012	Semiconductors
01003008	Data Processing / Data Interchange, Middleware
01006009	Signal Processing

Market

01004002	Data communication components
03006	Fibre Optics
03007002	Other measuring devices
03007003	Other analytical and scientific instrumentation
08005	Other Industrial Products (not elsewhere classified)

NACE

J.61.1.0	Wired telecommunications activities
J.61.9.0	Other telecommunications activities
J.63.1.1	Data processing, hosting and related activities
M.72.1.9	Other research and experimental development on natural sciences and engineering

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

ICT Industry and Services

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

2005

Turnover

<1M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German
Russian
Polish

Client Country

Netherlands

Partner Sought

Type and Role of Partner Sought

Type of partner:
Industry, research

Field of activity partners:
Companies, start-ups or research institutes that are interested in the development and production of application specific photonic integrated circuits (ASPICs).

Role of the partner:
The partner is desired to bring in the application using the application specific photonic integrated circuit (ASPIC). Typical market applications where ASPICs are used come from telecom, datacom, sensing, imaging, metrology, microwave photonics and bio photonics based applications.

The Dutch SME is interested in commercial agreements with technical assistance to develop the ASPICs.

The Dutch SME offers the following services:

- Translation of applications into PICs.
- Prototyping of PICs.
- PIC technology comparison.
- Mask design.
- Licensing of intellectual property blocks.
- Selection of the foundry, both Multi Project Wafer (MPW) foundries and custom foundries.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments

Technology Request

Czech manufacturer of woven fabrics seeks industrial partners and R&D institutions to jointly develop novel woven technical textiles and products based on 3D and multi-axial technology

Summary

A Czech trans-nationally active manufacturer of woven fabrics carries out development of 3D and multi-axial woven structures using state-of-the-art weaving technology for the production of demanding technical fabrics from a range of materials including carbon fibres. The company is looking for industrial partners and R&D institutions for joint development of novel technical textiles and products applicable in industries based on technical cooperation agreement.

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Reference	TRCZ20180514001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/dd2f612c-c0b5-4e6c-bd30-55910aad33e2

Details

Description

A Czech company with a long-term experience in the production of woven fabrics carries out development of 3D and multi-axial woven structures for the production of sophisticated fabrics applicable in a wide spectrum of industries. The company possesses state-of-the-art weaving technology and uses its own laboratory facilities. It actively collaborates with research institutes and universities, thanks to that it has a direct influence on the modification of existing solutions.

Woven structures include:

3D woven structures

- Distant fabrics - two- and multilayer fabrics are woven in one step. Each of these layers is joined by individual threads or the column is in-weaved which guarantees the distance characteristics of the fabric. In addition, the threads or columns can be transposed so that they are not above one another in the entire width of the fabric.
- Tubular fabrics - The tubes can be drawn in a straight, longitudinal, transverse or any diagonal direction. They can take the form of a circle, loops, spirals, depending on the application's request.

- Profiles - profiles are unique in their complexity. Each "lamella" is firmly joined in one unit due to the interconnection of the threads. There are no glued joints so de-lamination of the structure when exposed to stress is impossible, this is a one piece structure.

Multi-axial woven structures

- Multi-axial reinforcements - in order to achieve better results in multi-axial stress, a different angle fabric layering method is used. Thanks to multi-axial weaving, the layer can be directly integrated into the base fabric to create "diagonals" of different angles in the area. By adding a multi-axial layer, there will be no "double" weight increase in addition compactness of the fabric is increased. Using a suitable sleeve, combination of different materials is possible.
- Locally reinforced fabrics – multi-axial addition of a further set of threads at different angles may not be homogeneous in the area. The reinforcement layer can be located in places that will be more stressed (in joint locations when copying the shape of the flanges; no further thread system will be added at the fabric cutting point). Combination of different materials is obvious.
- Conductive tracks and electromagnetic shielding - heating or electromagnetic shielding, which can be achieved by means of warp and weft, can suitably be complemented with a multi-axial layer. This layer can be placed across the width of the fabric, or just locally to copy a particular shape. Thanks to the machine design, these tracks can be made from various conductive and non-conductive materials.

Ballistic protection – the company's focus also includes the segment of protecting people and property. For these applications the most efficient are aramid fibres which are appropriately woven into a "spatial" structure. By particular layering and spatial arrangement, an increase in ballistic resistance is achieved.

The working width of the 3D technology is up to 180 cm, the multi-axial one up to 210 cm. Jacquard technology enables unlimited possibilities of patterning of both flat and 3D spatial structures. Multi-axial technology allows the achievement of multi-axial reinforcement and the application of embroidered effects in one step during the weaving process. This system can also be used for functional creation of conducting tracks, local reinforcements and for getting new utility properties by combining different materials. A number of materials as cotton, viscose, PES, carbon, basalt, aramid are processed. The ways of processing depend on specific applications.

Technical cooperation agreement is suggested to co-develop novel technical textiles and products for industries.

Technical Specification or Expertise Sought

The searched partner is expected to be able either to co-develop a complex solution (the complete development of a particular end-product starting with the choice of the material supplier through the composition of the developed product or its parts) or to make just partial steps (in particular composite manufacturers).

IPR Status

Secret Know-how

Keywords

Technology

002006001	Building Materials, Components and Methods
02007018	Advanced Textile Materials
02011002	Aircraft
03005009	Woven technical textiles for industrial applications
10001005	Radiation Protection

Market

08005	Other Industrial Products (not elsewhere classified)
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NACE

C.13.2.0	Weaving of textiles
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Open for EOI : **Yes**

Client

Type and Size of Organisation Behind the Profile

Industry SME 50-249

Year Established

1998

Turnover

Ref: TRCZ20180514001

1 - 10M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German

Client Country

Czech Republic

Partner Sought

Type and Role of Partner Sought

Industrial SMEs - automotive, aerospace, chemical, electric, machine industry, defence industry, building industry, technical fabrics and clothing textiles industry.
R&D institutions, university institutes.

Joint development of novel technical textiles and products either as a complex solution or as partial steps. Any reasonable outcome will be protected by a utility model, patent, or other form of intellectual property protection.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Technical cooperation agreement

Attachments
