Profile Status: Published

Technology Offer

Buccal fixing device for athletes that simulates training at altitude

Summary

An inventor from Southern Spain has designed and patented a small and light buccal fixing device for athletes that simulates training at altitude by limiting the amount of air breathed. The inventor is looking for partners interested in manufacturing and marketing this product. Thereby, the following agreements are offered: manufacturing, commercial with technical assistance, and financial.

Creation Date	25 August 2017
Last Update	18 September 2017
Expiration Date	18 September 2018
Reference	TOES20170822001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/d21174e1-5c28-4996-b35e-db0c4db9ee92

Details

Description

As it is known, altitude training is the practice by some endurance athletes of training for several weeks at high altitude where partial pressure of oxygen is significantly lower than that at sea level. Presumably this practice makes the performance of athletes -whether their strength, speed and/or endurance- improve markedly when competing at lower altitudes. Since suitable locations for training at altitude are scarce and expensive some systems and devices to simulate training at altitude have been developed (e.g. altitude simulation room, training masks, etc.). However, these alternatives are either expensive -so only available to elite athletes- as in the case of altitude simulation room, or their use is uncomfortable and unsightly, as in the case of training masks.

The Spanish inventor has designed and patented a small and lightweight buccal fixing device that simulates training at altitude by limiting the amount of air breathed. Thus, this device predictably strengthens the diaphragm and increases the elasticity of the athlete´s alveoli and so improves their performance. This device is much easier and more comfortable to use in comparison with training masks and is affordable for both elite and amateur athletes. The device is composed of two small and light pieces: a simple mouth guard and a small anti-snoring device which are joined and interconnected by several air passages that conduct the athlete's breathed air through their mouth. This air passages can be adjusted to control the amount of air that the athlete inhales in each breath. In a more sophisticated version the device also contains a sensor that connects via Bluetooth with the athlete's mobile phone. By this sensor it is possible to measure the flow of air passing through the device and thus obtain useful information about the athlete's training.

Having designed and patented this innovative product the inventor would like to start the manufacturing and commercialization stage. For this purpose the inventor is looking for partners which highly value the market potential of this product and are willing to pool resources and jointly take risks. Thus, the inventor believes that the most appropriate types of cooperation agreements are:

1) Manufacturing.
2) Commercial with technical assistance.
3) Financial

With the first type of agreement the inventor expects to achieve long-term cooperation with sports equipment manufacturers that have sufficient capacity and resources to carry out the manufacture of this buccal fixing device. With the second type of agreement the inventor expects to achieve long-term cooperation with sports equipment distributors -and with sports equipment manufacturers too- that have a consolidated distribution network to carry out the marketing of the device. Finally, with the third type of agreement the inventor expects to achieve short or medium term cooperation with private investors who are willing to provide financial resources to undertake the manufacturing and commercialization stage.

Advantages and Innovations

The main innovations of this device are as follow:

- It consists of two small and light pieces, made mainly of plastic material, one of which is placed inside the athlete's mouth and the other on the outside, close to their lips.
- It is held by the athlete's mouth, so no additional fastening elements are necessary.
- The regulation of the amount of air inhaled exclusively by the athlete's mouth is made through several air passages located between the two pieces.
- It can have a sensor to measure the flow of air passing through the air passages and thus obtain useful information about the athlete's training.

These innovations give the device a number of advantages in comparison with the training masks:

- It is much lighter and so much easier and more comfortable to use. In fact, it only weights 26 gr. versus 140 gr. on average of elevation training masks.
- It is cheaper since manufacturing and distribution costs are lower.
- It does not cause feelings of overwhelm.
- It does not cause a shocking visual impact.
- It is easier to clean.
- It is easier to transport.
- Its use is personal and non-transferable.

Stage of Development

Available for demonstration

Comments Regarding Stage of Development

Only the prototype without sensor is available for demonstration

IPR Status

Design Rights,Patents granted,Trade Marks,Exclusive Rights

Comment Regarding IPR status

Patent granted in Spain.
Trade mark applied for in Spain.
Design right granted in Spain.

Profile Origin

Private (in-house) research

Keywords

Technology

11007	Sports and Leisure

Market

07001004	Sporting goods, hobby equipment and athletics clothes

NACE

M.74.9.0	Other professional, scientific and technical activities n.e.c.

Network Contact

Issuing Partner

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Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

Inventor

Year Established

2017

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

The inventor is looking for the following types of partners:

- Sports equipment manufacturers.
- Sports equipment distributors.
- Private investors.

The first type of partners would be in charge of manufacturing the buccal fixing device and marketing it just in case they have their own distribution network. The second type of partners would be in charge of marketing the buccal fixing device. The third type of partner would provide the necessary financial resources to undertake the manufacturing and commercialization stage.

Type and Size of Partner Sought

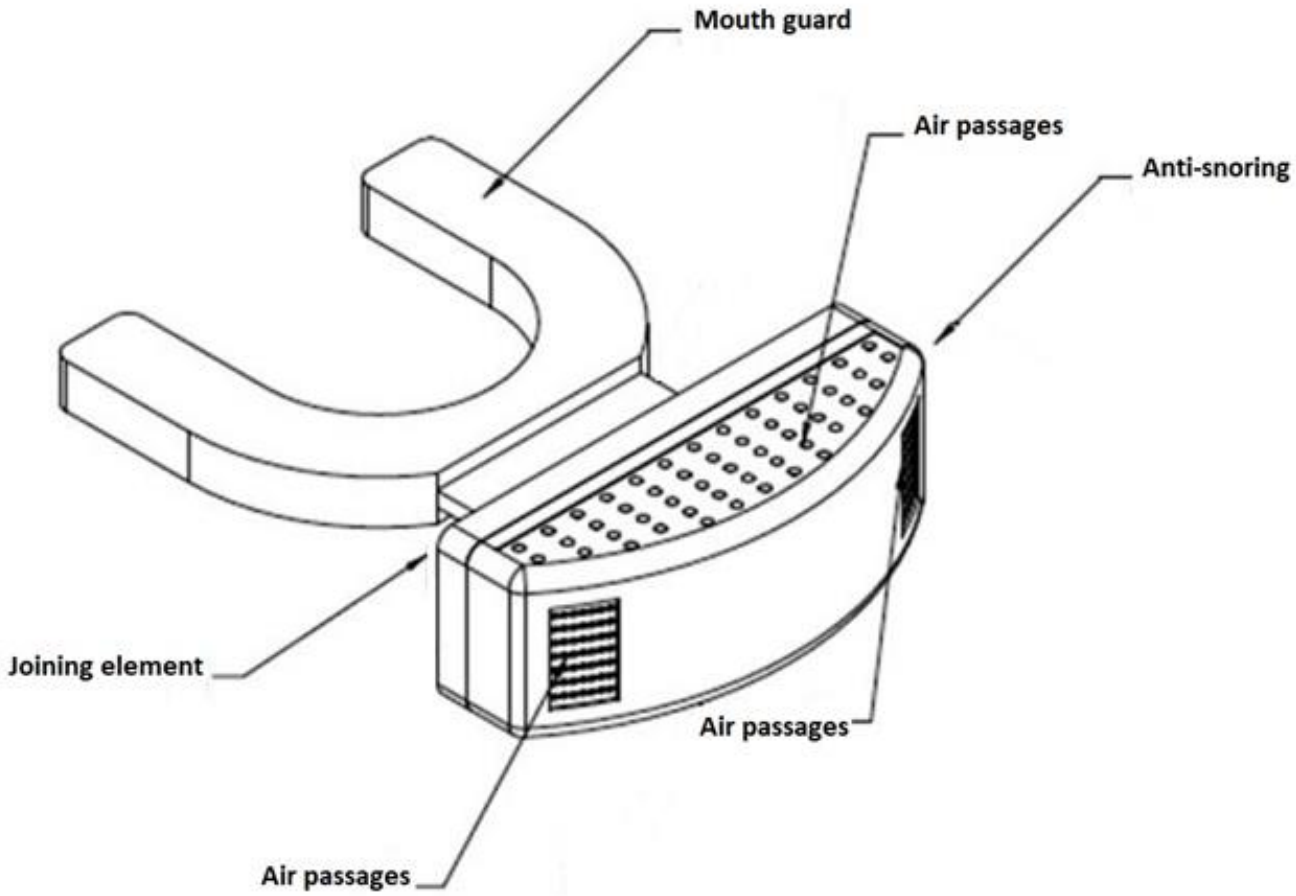
SME 11-50,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

Financial agreement
Manufacturing agreement
Commercial agreement with technical assistance

Attachments

Buccal fixing device 3.jpg



Buccal fixing device 1.jpg



Buccal fixing device 2.jpg



Profile Status: Published

Technology Offer

Volume production readiness for cyber skin

Summary

A UK research group has developed and tested methods for making stretchable electronics in volume, based on biocompatible elastomers. Wearable and implantable prototypes exist. Further concept testing and scaling up is sought with developers of smart biosensors and consumer and health products, both in industry and academia. Cooperation type is likely to be licensing or technical cooperation.

Creation Date	25 September 2017
Last Update	02 October 2017
Expiration Date	02 October 2018
Reference	TOUK20170925001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ec4a53bf-ee83-4056-afff-0bc665bfaf65

Details

Description

Stretchable electronics is coming of age. Research into it has been on-going for over a decade. In the early days, it was regarded as a technology-push type innovation but the first products on the market make a case for it and have encouraged talk of a new massive trend. Electronics will transform into structural electronics. This means that electronic devices will be built into things, they will become invisible. Instead of something that you wear, electronics will be built into things such as cyber skin.

A well renowned research group in the East of England has now developed methods that allow for scaling up the making of stretchable electronics on biocompatible substrates.

The group has prototyped devices such as skin sensors (see the Pictures). Such circuits have been trialled as both wearable and implantable.

From a technology perspective, the limits have been pushed. High resolution, down to 50 nm, has been achieved. Simple patterning is amenable to volume production. From the biocompatibility and applications perspective, the process is free from harmful substances. The morphology and roughness of the substrate can be varied so as to accommodate for electrochemical sensors, enzyme immobilisation and other desirable features. It is not difficult to imagine how for example biosensors can be integrated into consumer or healthcare products so they are less intrusive and much easier to accept.

The UK University wishes to team up with companies but also researchers developing smart devices and sensors in the fields of human and veterinary health, smart textiles or clothing, skin patches, socially acceptable robots etc. The types of co-operation may include licensing or technical co-operation.

Advantages and Innovations

This is the first time that metal electrodes can be deposited reliably on biocompatible elastic substrates using existing and scalable machinery. The method allows for both:
- High resolution;
- Chemical compatibility with well-known biocompatible polymers and elastomers.
The main advantage is the possibility for volume production of numerous smart sensors, stretchable consumer products etc.

Stage of Development

Available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Profile Origin

National or Regional R&D programme

Keywords

Technology

01002001	Micro and Nanotechnology related to Electronics and Microelectronics
02007014	Plastics, Polymers
02007018	Advanced Textile Materials
06001021	Single Use Products and Consumer Goods
06001024	Medical Biomaterials

Market

05003003	Surgical implants
05009003	Animal health
07001004	Sporting goods, hobby equipment and athletics clothes
07004002	Health and beauty aids

NACE

P.85.4.2	Tertiary education

Network Contact

Issuing Partner

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Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

University

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English

Client Country

United Kingdom

Partner Sought

Type and Role of Partner Sought

Type of partner sought: industry and academia;
Specific activity of partner: developers of health and consumer products, also veterinary products that will benefit from stretchable electronics;
Role of partner sought: joint prototyping and scaling up.

Type and Size of Partner Sought

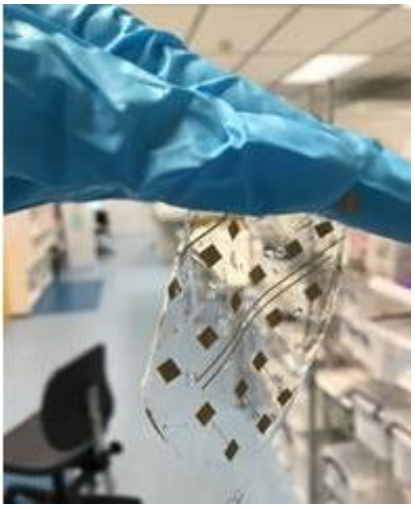
SME 11-50,R&D Institution,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement
Technical cooperation agreement

Attachments

Capture2.PNG



Capture.PNG



Profile Status: Published

Technology Offer

Anti-lock braking system for bicycles with suspension fork.

Summary

A German university offers an anti-lock braking system for bicycles with a suspension fork. It increases safety significantly as it lowers the risk of the cyclist to fall. The system has a simple and robust set-up and can be retrofitted to existing bicycles. The system is at the development stage. An industrial licensee with an interest in further development is sought.

Creation Date	13 February 2018
Last Update	15 February 2018
Expiration Date	15 February 2019
Reference	TODE20180213003
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/6b462195-36fb-4482-9bcf-f7b9f41001ee

Details

Description

When braking abruptly a cyclist may experience that the rear wheel of the bicycle loses contact with the pavement. Then there is a high risk of falling on or flying over the handlebar, especially in emergency braking. To prevent falls, the blocking of the front wheel should be prevented during braking.

A German university offers a new anti-lock braking system. This development presents a simple solution for bicycles with a suspension fork and a mechanical or hydraulic brake. Due to the compression during braking the new system reduces the pressure on the brake, so that the front wheel is not completely blocked. Thus, the loss of contact of the rear wheel through lifting is avoided and the risk of falling can be significantly reduced. Because the anti-lock braking system operates purely mechanically, it is ready for use at any time. The simple and robust construction ensures a high degree of safety and reliability.

The system is especially suited for mountain bikes and pedelecs that can reach high speeds. It increases safety considerably. The anti-lock braking system can also be easily retrofitted. It is robust and low maintenance.

An industrial partner, i.e. a bicycle or bicycle accessories manufacturer is sought for licensing. The partner should accompany the further development activities to prototype and serial production.

Advantages and Innovations

This is a new invention that has to date not been available for bicycles in a comparable way. It has the following advantages:

- Increased safety
- Simple and robust set up
- Low cost
- Retrofittable to existing bicycles

Stage of Development

Under development/lab tested

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

A German patent application was filed.

Profile Origin

Private (in-house) research

Keywords

Technology

02008005	Road Transport
02009025	Braking system
10001	Safety
11007	Sports and Leisure

Market

07001004	Sporting goods, hobby equipment and athletics clothes
09001	Transportation

Network Contact

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Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

University

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
German

Client Country

Germany

Partner Sought

Type and Role of Partner Sought

The university offers interested companies the opportunity to license and further develop the technology to prototype stage in the next step. Potential partners are manufacturers of bicycles or bicycle accessories.

Type of Partnership Considered

License agreement

Attachments

Braking_system.jpg

