

Interreg



Sudoe



IMIP
Innovative Eco-Construction System Based on
Interlocking Modular Insulation Wood & Cork-Based Panels

European Regional Development Fund

WP3 Product 3.2.

Report on IMIP Patent

IMIP-SOE3/P3/E0963

Project funded by the Interreg Sudoe programme through the European Regional
Development Funds (ERDF)



PROJECT CONTEXT

Project acronym IMIP

Project title Innovative Eco-Construction System Based on Interlocking Modular Insulation Wood & Cork-Based Panels

Project code SOE3/P3/E0963

Coordinator Universitat Politècnica de València (UPV), Instituto ITACA

Duration 1 May 2020 – 31 April 2023 (36 months)

Working Package (WP) WP.3

Technical Report Product 3.2.

Delivery date 04/2023

Activity coordinator UPV

Main authors José Vicente Oliver, Salvador Gilabert, Eva Hermoso, Emilio Luengo

Document ID IMIP_ P3.2

PARTNERS



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA



Universitat Politècnica de València
Instituto Universitario de las Tecnologías de la Información y
Comunicaciones

Information and Communications Technologies versus Climate Change



Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, O.A., M.P - Centro de Investigación FORestal - Departamento de Dinámica y Gestión Forestal (INIA-CIFOR)



Institut Technologique Forêt Cellulose Bois-construction Ameublement (FCBA)



Asociación de Investigación Técnica de las Industrias de la Madera (AITIM)



Agencia Andaluza de la Energía
CONSEJERÍA DE HACIENDA, INDUSTRIA Y ENERGÍA

Agencia Andaluza de la Energía (AAE)



IVE
INSTITUT VALENCIÀ de l'EDIFICACIÓ
INSTITUTO VALENCIANO de la EDIFICACIÓN

Instituto Valenciano de la Edificación Fundación de la Comunitat Valenciana (IVE)



INSTITUTO SUPERIOR de AGRONOMIA
Universidade de Lisboa

Instituto Superior de Agronomia (ISA)



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Universitat Politècnica de Catalunya (UPC)



Pôle de Compétitivité Xilofutur MAT FORETS CULTIVEES

CONTENT

CONTENT	2
INTRODUCTION.....	4
OBJECTIVE.....	6
IPR AND PATENT PROCEDURES	8
ACTUAL STATUS OF PATENT	13
FUTURE ACTIVITIES	20

INTRODUCTION

The work is contemplated in the IMIP project of the INTERREG SUDOE Program, within Working Group 3: (Testing), more specifically as Product 3.2 Patent.

This work focuses on the analysis report of the patentability process of the main highly innovative result of the IMIP project, which is the three-layer IMIP SIP Panel (Structural Insulated Panel), made up of two 45mm cross-laminated IMIP composite panels and a natural cork core of 100mm, with a total of 190mm.

Table 1: Programme and Project objectives and results.

Programme specific objective	To improve energy efficiency policies in public buildings and homes through the implementation of networks and joint experimentation.
Project main objective	To support the change towards a low carbon economy using bioproducts (wood and cork) for smart, sustainable, and inclusive growth with a special focus on the public construction sector.
Project specific objectives	<p>To design, validate and implement a new ecological construction system to improve energy efficiency in public buildings. Related activities are:</p> <ul style="list-style-type: none"> - To design an ecological construction system based on innovative wood and cork products supporting a low carbon economy, - To test prototypes, - To develop an Information and Communication Technology for design, modelling, and evaluation of potential construction solutions, - To compare the modular and interconnected insulating panels designed with currently used insulating panels, - To disseminate results and to train prescribers.
Programme result indicator	Percentage of actors in the energy efficiency sector participating in transnational cooperation projects.
Project results	<p>An interconnected modular system of insulating panels made of wood and cork to improve energy efficiency of buildings, including their entire life cycle.</p> <p>A BIM plug-in to analyse the environmental benefits of bioproducts used in construction (carbon storage and substitute effect).</p>

OBJECTIVE

The main objective of this product report is to analyze the patentability process of the main highly innovative result of the IMIP project, which is the three-layer IMIP SIP Panel (Structural Insulated Panel), made up of two 45mm cross-laminated IMIP composite panels and a natural cork core of 100mm natural, with a total of 190mm.

The process leading up to a patent for a product developed from a project is very long and goes far beyond the total duration of the project, especially if we take into account that the product developed as an invention has obviously been developed and tested both in laboratory and on site during the execution of the project.

That is why this product report focuses on the patent procedures that are in force at the UPV, as the coordinating entity of the project and responsible for this task. In addition, it will be explained at what point in the process of requesting the protection of results is the innovative product to be patented at the time of closing the IMIP project, as well as the future steps.

PARTNERS



Agencia Andaluza de la Energía
CONSEJERÍA DE EMPLEO, EMPRESA Y COMERCIO



ASSOCIATED PARTNERS



IPR AND PATENT PROCEDURES

The main and most innovative product resulting from the development of the IMIP project is the three-layer IMIP SIP Panel (Structural Insulated Panel), made up of two 45mm cross-laminated IMIP composite panels and a 100mm natural cork core, with a total thickness of 190mm. Once the project has been completed and developed and tested in the laboratory and on site, the intellectual property protection process and the consequent patent have begun, as approved by the Steering Committee at the project final meeting. Under the coordination of the UPV, the team in charge of the patent are the partners CSIC-INIA, AITIM and UPC.

The procedure for the protection of research results and, with it, the final patent process is regulated by the Regulation for the protection and transfer of intellectual and industrial property rights of the Universitat Politècnica de València (UPV), which was approved by the Governing Council of November 9, 2012.

In summary, the main aspects that we have to take into account in this procedure are the following:

Ownership of the results of research, development and innovation activities

The industrial and intellectual property rights (IPR) generated by the results derived from third-party subsidies or grants or own financing correspond to the UPV. When these rights derive from contracts signed with companies or other types of entities, the corresponding contract must state who owns the results obtained.

Communication of research, development and innovation results subject to legal protection and transfer

Any UPV staff who carry out a research, development or innovation activity, when they consider that there are results capable of economic exploitation, must communicate this situation to the Research, Innovation and Transfer Promotion and Support Service (I2T) prior to the publication of such results.

Notification to I2T must be in writing and contain at least the identification of the inventors and, in the case of computer programs and databases, that of all their authors, the latter being understood as both the authors of their source code and the people who have contributed intellectually in obtaining it. It must also have a brief description of the results, the origin of the financing that has allowed them to be generated and the development costs.

An interlocutor will be identified from among the inventors and/or authors of the permanent staff of the UPV, who will channel the relationship with the I2T. The I2T will establish the procedure by which this communication will be made.

Protection through patents and utility models

As a general criterion, the UPV preferably uses the protection of inventions through the patent modality as opposed to utility models.

The I2T, with the collaboration of the inventors and/or authors, analyses directly, or through third parties, the patentability, the exploitation potential of the reported result and the most effective way for said exploitation. Likewise, it takes into account the suitability of the protection in the context of the transfer potential of the Research Structure in which the invention originated. The governing bodies of the UPV evaluate and decide the feasibility of the proposed patent.

The costs of protecting the UPV patents are borne by the budget item that the University allocates for this purpose and which is managed by the I2T.

The possible decision of the UPV not to exercise its right of ownership over the result gives rise to the application of article 20.5 of Law 11/1986, of March 20, on Invention Patents and Utility Models on assignment of rights to personnel investigator. In the case of exploitation of the patent by the inventors, in compliance with current legislation, the UPV will be entitled to a share in the benefits generated and a free license to use the result for its research and teaching purposes as well as for any other use of your interest.

The transfer of ownership of the result to the inventors will be carried out through a contract that, among other aspects, will regulate the way in which said benefits will be settled. This contract will be proposed to the inventors by the I2T.

The I2T is responsible at the UPV for the processing to obtain the patent or utility model title, being able to access the external professional services it deems appropriate (patent and trademark offices).

The I2T keeps a record of the patents and utility models applied for and granted under UPV ownership, and notifies the Rectorate of the patent application records for the purposes of their inclusion in the UPV heritage.

Subject to the preparation of an exploitation plan and the availability of funds, the I2T Management may decide on the Patent Cooperation Treaty request for the international extension of the patent.

Subject to the availability of funds and the approval of the Rectorate of the UPV, the I2T will propose the continuity of the protection through the entry into national phases in those countries with prospects for exploitation, as well as the mode of co-financing of the same by part of the inventors' own funds. For this purpose, the scientific interlocutor and the I2T will sign an agreement that will include the co-financing conditions of the protection.

The maintenance of patent protection will be conditional on its effective exploitation and/or its co-financing in accordance with the criteria described above.

The UPV may assign to the inventors the transfer of ownership of the patent. This assignment will be made through a contract that, among other aspects, will regulate the way in which said benefits will be settled. This contract will be proposed to the inventors by the I2T.

Promotion and commercialization of patents

The I2T makes public in the Catalogue of Technological Offer of the UPV, the portfolio of inventions patented by the same and will establish, for those cases that its direct adjudication is not applicable, a procedure that allows the competitive concurrence of those interested in the acquisition of the technology.

For this, the scientific interlocutor and the I2T Management sign an agreement that includes the responsibilities in the promotion actions.

The I2T, in collaboration with the interlocutor, is the unit in charge of negotiating the license or, as the case may be, assignment of the UPV patent rights, being able to propose criteria for negotiating the licenses.

Distribution of income from patent licenses or assignments

Inventors of UPV patents may participate in the benefits of their exploitation.

The income obtained from the licenses or assignments of the patents and that correspond to the UPV compensate, in the first place, the previous or foreseeable expenses until obtaining new income that were associated with the protection of the same, the expenses incurred by the University in the commercialization and the commitments derived from assignments of third parties.

The difference between the income and expenses or others that may arise as a result of the terms of the license agreement, will constitute the benefits of the exploitation, which will be distributed according to the following distribution:

- a) 45% to cover technology transfer costs from the UPV. Up to 50% of this amount may revert to the own funds of the inventors or the Research Structure, to the extent of their contribution to the protection expenses.
- b) A maximum of 60% for the inventor or inventors of the patent, which may be reduced in favour of their research structure to a minimum of 1% by their express agreement and which will be distributed in proportion to their participation in it.

The income from the licenses or assignments of patents, as well as the expenses associated with them, the expenses incurred by the UPV in commercialization and the commitments derived from assignments by third parties are managed in the I2T.

The liquidation of the benefits are carried out annually, in the first three months of each fiscal year.

Specific aspects of intellectual and industrial property derived from R&D or collaborative grants

Agreements may be established with third parties so that, in a limited way, they promote some of the capacities or research results of the UPV, provided that the latter is identified as the owner thereof.

The permissions granted for the use of the logo or the name of the UPV must avoid the identification of the third party as a subsidiary or entity under its responsibility.

The I2T endorses and registers the agreements established for this purpose, which will be signed by the Chancellor.

The formalization of a relationship action with a third party to carry out a research or innovation activity that is established by agreement or contract under article 83 of the Spanish Organic Law 6/2001 of Universities must contain at least the following in relation to intellectual and industrial property rights:

- a) The complete identification, if any, of the previous intellectual and industrial property rights of the parties that were to be used in the execution of the agreement or contract, which in the case of the UPV must be registered in the Technological Offer Catalogue.
- b) Ownership of the resulting intellectual and industrial property rights. The UPV retains ownership rights if the other party does not financially compensate the total cost, including indirect costs, invested in obtaining them, or if rights are strategic for the University's lines of research. Where possible, co-ownership of intellectual and industrial property rights should be avoided. In cases where a patent is requested, the character of inventor of the members of the UPV who have contributed to it will be respected.
- c) The exploitation rights that are granted on resulting intellectual and industrial property rights and on the previous ones, when these are necessary for the exploitation. The definition of the specific exploitation conditions may be deferred until the research results have been obtained.

ACTUAL STATUS OF PATENT

Following the procedure summarized above, at the time of completion of the project, the IMIP project team has started the procedures for the patentability of the IMIP SIP three-layer panel.

Currently, the process is at the beginning, in which it has been communicated, among others:

- the type of invention and the technical description of the product to be patented,
- the description of the most innovative aspects,
- the manager of the process of protection of the results and patent,
- the inventors,
- the co-owner entities and their participation,
- the project that has funded the research,
- the use of intellectual and/or industrial property rights of third parties,
- reference scientific and technical publications,
- and the exploitation model that is intended.

We include a copy of the process initiated in the UPV's I2T research results protection system.

Comunicación de Resultados de I+D a proteger

Procedimiento regulado en la Normativa de Derechos de Propiedad Intelectual e Industrial de la UPV

Por motivos de seguridad, para el correcto funcionamiento del formulario debe realizar la comunicación desde un equipo dentro de la UPV. En caso de estar fuera de la UPV, deberá previamente establecer VPN. **Para asegurar un correcto envío por favor utilice un navegador Chrome.**

¡Atención! Los campos marcados con asteriscos (*) son obligatorios.

Título* ?

Panel IMIP SIP (Structural Insulated Panel) tricapa (compuesto por dos paneles IMIP corr

Gestor ?

Buscar persona ?

Oliver Villanueva

Seleccionar persona:

José Vicente, Oliver Villanueva (joolvil@upv.es) ▼

Nombre

José Vicente

Apellidos

Oliver Villanueva

E-mail

joolvil@upv.es

Teléfono

12766

Tipo de resultado ?

Selecciona un tipo de resultado para continuar:

Software **Invencción**

Inventores ?

Nombre	DNI	Nacionalidad	Entidad	Categoría	EPI	Nombre EPI	E-mail	%	Int.científico
Oliver	29	española	Unive	CU	<input type="checkbox"/>		joc	35	<input checked="" type="checkbox"/>
Gilabe	22	española	Unive	COD	<input type="checkbox"/>		sa	35	<input type="checkbox"/>
Hermc		española	CSIC-	Investig:	<input type="checkbox"/>		he	15	<input type="checkbox"/>
Luenq	28	española	AITIM	Investig:	<input type="checkbox"/>		e.l	15	<input type="checkbox"/>

Buscar:

Cuadro cotitulares ?

¿La titularidad de la patente debe ser compartida con otra entidad? **Sí** No

Entidad cotitular	% de cotitularidad	
UNIVERSITAT POLITÈCNICA DE VALÈNCIA - UPV	35	
Universitat Politècnica de Catalunya	35	<input type="radio"/>
CSIC-INIA	15	<input type="radio"/>
AITIM	15	<input type="radio"/>

Añadir entidades

Información

Breve descripción técnica del resultado*

4- Formación de cerramiento exterior sin función resistente a falta capa de protección impermeabilizante exterior.

Soluciones que resuelve el sistema "Panel IMIP SIP tricapa"

-Resuelve problemas de la eficiencia energética de los edificios tanto en obra nueva como en rehabilitación.

-Sustituye y reemplaza sistemas constructivos de alto impacto

Proyectos o contratos que han financiado la investigación* ?

INTERREG SUDOE IMIP "Innovative Eco-Construction System Based on Interlocking Modular Insulation Wood & Cork-Based Panels"

Estimación del coste de obtención del resultado* ?

20000

Uso de derechos de propiedad intelectual y/o industrial de terceros ?

No

Enumeración de los aspectos novedosos*

La utilización de CLT compuesto en base madera de dimensiones reducidas, 45mm y de alta resistencia mecánica que actualmente no existe en el mercado.

El bajo impacto medioambiental para sistemas de cubiertas ligeras
La mejora en el aislamiento térmico y eficiencia térmica de los edificios mediante la utilización del corcho natural., Materia prima que además actúa como sumidero de carbono y de bajo impacto medioambiental.

Publicación

¿Se ha publicado o se prevé su publicación? Sí No

Fecha de publicación

31/12/2023

Referencia completa de la publicación

Design of an Innovative Eco-Construction System Based on Interlocking Modular Insulation Wood & Cork-Based Panels

MDPI Forests
ISSN 1999-4907

Palabras claves Español ?

Tableros tricapa; madera contralaminada; Pinus pinaster; Quercus suber; Corcho negro expandido; modular; interconectable

Palabras claves Inglés ?

Wood-based sandwich; cross-laminated timber; Pinus pinaster; Quercus suber; expanded cork panel; modular; interlocking

Modelo de explotación que se propone * ?

TRL 8

Licenciable a industria de la madera y de la construcción en madera

Observaciones ?

[Cómo llegar](#) [Planos](#) [Contacto](#)

Universitat Politècnica de València © 2018 · Tel. (+34) 96 387 70 00 informacion@upv.es

| |



FUTURE ACTIVITIES

Once the application has been submitted to the I2T of the UPV, according to the established procedure, the next step to take in the coming months is the evaluation by the I2T of the UPV of the viability of the patent from the point of view of the level of innovation. For this, the following aspects are analysed on the first documentation provided:

- a) Novelty: the invention is not included in the state of the art.
- b) Inventive Step: the invention does not result from the state of the art in an obvious way for an "expert in the field". This excludes those evolutions or applications of knowledge that a graduate, architect or engineer in the field could reach without doing more R&D.
- c) Industrial Application: the invention must be capable of being used or manufactured in any branch of industry.
- d) Sufficiency of the description: The patent must contain sufficient technical information for its implementation or execution.

In the case we obtain a positive evaluation of the first procedure by the I2T at the UPV, the Patent Registration Procedure begins. Formally, patents are requested in Spain through a request addressed to the director of the Spanish Patent and Trademark Office ("Oficina de Patentes y Marcas").

For this, a document has to be prepared, based on the application already presented for the internal first stage, which includes the description of the invention, one or several claims in which the essential technical characteristics of the product or process that is the content of the application are detailed, technical drawings to clarify the descriptions and a technical summary of the invention.

It must be taken into account that the duration of the patent registration procedure between the application by the I2T of the UPV and the grant takes a long time, which is usually 26 to 36 months, including the international patent application. Nevertheless, during this time, the owner can already have a provisional protection of the invention.

It must also be considered that industrial property rights are territorial, and therefore only obtain protection in the territory of the country or countries in which the registration is requested. To obtain protection in several countries, we have to carry out the protection procedures in each of them. Nevertheless, there are international agreements that simplify registration procedures at the European level.

Finally, patents have a maximum duration of 20 years from the date of application. At this time, the holder has a monopoly to control the production, sale or commercialization of his invention within the country in which the grant of the patent has been requested. After this 20-year period, the invention becomes part of the public domain and any person or company may use or manufacture it without compensation to the owner.