

The Open Call

Contents

This is the fifth edition of the newsletter related to the LightCoce Project. This issue is dedicated to an overview of the LightCoce Open Call, focusing on the launching on the platform, on the profile of the organizations that may be interested, and on the reason why they should apply. Moreover, it will be carried on a general overview of the Pilot Lines and the different services provided by the open call.

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What is LightCoce project?

LightCoce is a research project funded by the European Community under the H2020 program, with the aim of creating an ecosystem of business innovation capable of upscaling and testing new multifunctional lightweight materials for SMEs.



How LightCoce helps you overcome complex standards and regulations?

Standardization and regulatory compliance are key issues for further exploitation and commercialization of innovations. Testing will be in alignment with international standards (CEN, ISO, ASTM, etc.) and regulatory framework aiming to develop products towards EU standards.



Which is the target market of LightCoce?

LightCoce can address different types of customers such as: Banks, Funds / Investors, Incubators / Accelerators Public Bodies and Owners of Infrastructures Research Institutes / Universities, Large Enterprises, SMEs, Startup / New Ventures Industrial Associations or Groups Raw Materials Providers.



Do you need to innovate your business?

Innovation services are open access under specific fees to all parties, such as: development of business model, marketability assessment, suggesting technology to enable your value proposition or embodying it in a product / service in favour of the user, ensuring the proper protection of the IP developed and identifying the funding opportunities at local or EU scale.



Can large-scale modeling help you evaluate new opportunities?

The Modeling Group focuses on process modeling and simulation through the development of holistic models of processes through multi-scale modeling of materials and unitary operations. Moreover, predictive modeling at different levels will be implemented to generate a chain of models that lead to full-scale simulation of real structures, to evaluate the overall performance of solutions at a global level.



Which professionals can benefit from LightCoce services?

The relevant reference markets are different, such as: Construction Industry, Bricks and Tiles Industry, Aerospace Industry, Automotive Industry, Defense Industry.

The Open Call

Last 07/06/2021, the LightCoce Open Call has been launched and will be available until the end of August 2021. It is addressed to companies and SMEs around Europe that operate in the conventional and advanced fields of concrete or ceramics, interested in developing novel concepts within the lightweight, advanced concrete, or ceramic materials' value chain.

The open call allows interested companies to enter the LightCoce ecosystem free of charge. In the framework of the European open innovation test beds, the Project aims at offering an open-access Ecosystem for upscaling and testing multifunctional lightweight materials.

The main objective is to develop new business ideas, benefiting from the services provided by highly specialized organizations of LightCoce's ecosystem. Those services include the access to five pilot lines for concrete and ceramics' upscaling and testing, as well as other complementary activities related to the support of the commercialization of these materials, such as characterization, process modelling, quality assurance and monitoring, standardization, safety, market uptake, and innovation management.

Who should apply?

The LightCoce Open Call is addressed to SMEs, large enterprises, and industry as well as R&D organizations that are legally established in an EU member state or a third country. Those companies have to operate in the area of concrete or ceramics in an

innovative and dynamic way. In particular, the open call is related to the sectors of construction, automotive, and aerospace.

Why should you apply?

The LightCoce Open Call provides free-of-charge access to all the services and the facilities that are available in the LightCoce ecosystem. In addition, it gives the opportunity to innovate and develop companies' business ideas through a one-stop-shop. Entering the LightCoce ecosystem will lead the company to receive mentoring and support from highly specialized experts, networking and establishing long-term relationships with key industry players. The industry will be helped to minimize costs, lower technological risk in new materials or technologies adoption, tap into relevant competencies and gain access to services driven by business needs.

How to apply

The open call has been launched through the LightCoce online platform on June the 7th, 2021 and applications are welcome until the end of August. More information and the application form can be found on the LightCoce online platform at www.lighcoce.com

The Technical Service Provider

Università degli Studi di Padova



What: University

Where: Padova, Italy

Fields of expertise: Advanced ceramics and glasses.

Services provided: characterization.

The University of Padova provides **characterization services** on **glass** and **ceramics**. The University has a Universal Testing Machine able to test a wide range of materials (ceramics, metals, polymer, etc.) either in compression or tension. The maximum load is 25KN. Also, the machinery can perform three points and four points bending stress test with a maximum load of 10KN.

The specific surface area (SSA) can be analyzed through BET analysis. The equipment works either with Nitrogen and Argon to look up respectively for meso and micro-pores.

In addition, the density of a wide range of materials either solid or powder can be tested thanks to a brand-new helium pycnometer. Six different cell size samples are available: Large 131.7cc, Medium 48.1cc, Small 10.8cc, Micro 4.5cc, Meso:1.8cc, and Nano: 0.25cc.

The Technical Service Provider

FIW – München



What: Research institute and testing, monitoring and certification authority

Where: Gräfelfing, Germany

Fields of expertise: Insulating materials, building materials and building elements.

Services provided: characterization, testing of materials, components and products, standardization, and certification process for new materials.

FIW is a leader in the characterization and coordination activities for the testing of materials, components, and products, to ensure high-quality testing and high-quality parameters to steer the production process. It is also involved in the **standardization** and **certification** process for new materials.

In particular, the major field of expertise is **building materials** and **building elements** including **insulating materials**.

Among other services, some of the **testing services** provided by FIW are the evaluation of the performance of insulation materials; the thermal conductivity of thermal insulations at different temperature; the thermal conductivity of pipe insulation materials, pipe insulation and pipe systems at different temperature; dimensional stability and deformability; the behaviour at higher temperatures; the measurements of the heat transfer and the temperature field with standardised and specialised measuring and testing equipment for insulation material and building components; the requirements for the fire

protection and fire behaviour of building materials; the mechanical properties; the hygric properties and behaviour in frost; the on-site measurements with a heat flow meter; the heat, cold and moisture protection of materials; the energy efficiency of the opaque building envelope; the sustainability principles related to insulating materials and for the construction sector.

The Pilot Lines

Technische Hochschule Nürnberg



What: University

Where: Nuremberg, Germany

Fields of expertise: conventional ceramics (ceramic bricks), raw material processing, raw material characterization, product characterization.

Services provided: testing, upscaling, and characterization.

method), Thermal analysis (transient method), STA analysis, Mercury porosimetry, Gas adsorption (BET), Compressive strength analysis, Flexural strength analysis, E-modulus analysis, XRD analysis, IR spectroscopy, Microscopy.

The fields of highest interest for the research centre are conventional ceramics (ceramic bricks), raw material processing, raw material, and product **characterisation**.

In addition, the products can be characterised in laboratories with state-of-the-art equipment.

The institution has many years of experience in product **development** and product improvement in the field of masonry bricks and it is specialised in improving the thermal insulation properties of the products.

The pilot line facilities are equipped with numerous sensors to ensure complete control and documentation of process variables and conditions during the drying, extrusion, and firing phases of production, enabling rapid development of new or improved brick products. The customer therefore not only receives a new or improved product but also a wealth of valuable data at the end of the development process.

The Nuremberg University of Applied Sciences can cover a wide range of characterisations.

Thermal, mechanical, chemical, and morphological analyses can be carried out.

A selection of possible **analysis methods** comprises Thermal analysis (stationary

The Pilot Lines

Instituto de Tecnología Cerámica



What: Research Centre

Where: Castelló, Spain

Fields of expertise: traditional ceramics (ceramic tiles), raw materials characterization, materials processing and final product certification.

Services provided: upscaling, characterization, and standardization.

The Instituto de Tecnologia Ceramica is a research centre in Castelló in Spain. It is focused on traditional ceramics, with particular regard to ceramic tiles, raw materials **characterisation**, material **processing**, and final product **certification**.

The major services that are provided are upscaling, characterization, and standardisation. This is possible through a pilot plant of 600 square metres divided into three sections: the preparation of the body composition, the glaze and **engobe preparation**, and the tile **manufacturing**.

The principal customers of the research centre are companies interested in developing and introducing in the market new ceramic products with improved properties.

Their work and services follow European specification standards. In fact, among the activities carried out by the centre, there is also the execution of **tests** such as the **size and quality** of the **surface**, **resistance** to deep abrasion, thermal shock, or freezing, and other tests on materials such as ceramic tiles, floorings, ceramic and glass-ceramic ware, and ceramic clay materials.

The Pilot Lines

RI.SE



What: Research Centre

Where: Borås, Sweden

Fields of expertise: cellular lightweight concrete and cellular lightweight concrete composites.

Services provided: upscaling, characterization, and standardization.

RISE pilot line focuses on the production of cellular lightweight concrete, different types of concretes and/or lightweight composite elements. Cellular lightweight concrete is a mixture of cement, water, foam, and additives. Supplementary cementitious materials, fibres, and sand can be added depending on the different requirements needed.

This enables RISE to provide services like upscaling, characterization, and standardization. In this pilot line, lightweight composite elements using cellular lightweight concrete in combination with other types of concretes are developed to obtain the best performance for the different functions needed such as structural, thermal, and/or acoustic. In addition, the implementation of non-ferrous reinforcement is widely used at the RISE pilot line since it allows a significant reduction in the weight of the elements due to an improvement in the durability requirements. Moreover, in the RISE pilot line enhanced properties by means of nanoparticles' additions to the concrete are explored and used for offering enhanced properties such as self-sensing and easy to clean properties.

RISE pilot line allows the design, **development**, and **optimization** of materials, elements, and pilot production of cellular lightweight concretes and/or lightweight composite elements. The process at the RISE pilot line has 3 main stages: materials, elements, and pilot production. All these stages can be independent or can be combined.

The Pilot Lines

National Technical University of Athens



What: University

Where: Athens, Greece

Fields of expertise: multi-functional lightweight concrete and components.

Services provided: development, upscaling, and testing.

NTUA pilot line has as a field of expertise the multi-functional lightweight concrete and components. This allows them to provide services such as **development, upscaling**, and testing of concrete related products.

The NTUA pilot line is able to produce both ready-mixed and prefabricated samples and it is composed by 3 individual sub-pilot lines: the concrete line, the lightweight aggregates line and the nanosized industrial minerals line.

In addition, there are specific units dedicated to the preparation and pre-treatment of raw materials for the 3 sub-pilot lines. The materials prepared in the lightweight aggregates line and the nanosized industrial minerals line can be fed to the concrete production line.

The **concrete production** line has the capacity to perform pilot line trials in two scales, according to the desired production capacity and sample size.

The **lightweight aggregates production** line has two types of furnace, the vertical electrical furnace with productivity up to 500 litres/h and the IR furnace with a productivity up to 300 litres/h.

Finally, the **nano-sized industrial minerals production** line has a capacity of 10 litres per batch.

The Pilot Lines

Łukasiewicz Research Network – Metal Forming Institute

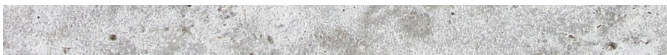
What: Research Centre
Where: Poznań, Poland
Fields of expertise: advanced ceramics.
Services provided: upscaling and characterization.

The main field of expertise is **advanced ceramics**, with strong capabilities in the **spark plasma sintering, upscaling**, and **characterization**.
SPS Pilot Line consists of spark plasma sintering HP D 25/3 system and pre- or post-processing equipment. The SPS technology significantly developed since '80 is a low voltage, direct current (DC) pulsed current activated, pressure-assisted sintering, and synthesis technique which can be widely applied for material processing.
SPS process is very fast, it takes no more than 30-45 mins for the whole cycle from powder to sintered parts.



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Types of services provided



07

Pilot Lines



03

Open Call length in months



09

EU countries involved in the Ecosystem



26

Organizations



Welcome to LightCoce partners 4 / 26 - fifth group



MOSTOSTAL

Mostostal Warszawa S.A. is one of the largest construction companies in Poland with 70-years history. The company is active in all basic sectors of the construction market specializing in bridges and steel construction, public utility buildings, industrial components, environmental protection projects as well as roads and underground constructions. The company acts as a general contractor of investment projects and provides turnkey execution of construction assignments. The company offers a variety of services, ranging from the execution of reinforced concrete and construction works, through delivery and erection of steel and structural elements to the assembly of high-pressure piping and boilers.

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NANOCYL

Nanocyl SA is the leading manufacturer of carbon nanotube powders and CNT-based materials worldwide. As an innovative company founded in 2002, Nanocyl operates in the field of research and development and is always looking for new applications of CNTs. The strategic axes of the company are energy, transportation, electronics packaging, and industrial applications. Nanocyl presents a strong team dedicated to R&D and technical developments with almost one-third of its employees devoted to these kinds of activities.

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NUOVA TESI SYSTEM

NTS, is a manufacturer of curtain walls in CLS panels, with thermal, fire-resistant, and lighter standard, with a wide range of exterior finishes. The thirty-year experience of the technical and production staff allows Logic panels to provide a high-quality product that can be used both in the construction industry and in the commercial/civil fields, also through prefabricated structures put in place.

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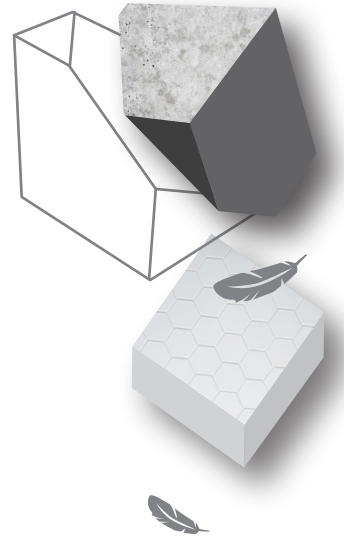
SCHLAGMANN POROTON

Schlagmann Poroton GmbH & Co KG is a company that develops, produces, and sells bricks and façade panels in Bavaria and bordering countries. It is an affiliated company of Wienerberger group, the world's largest producer of bricks. Schlagmann, with about 340 employees and five brick plants is part of Wienerberger's network of European plants, acting as the innovation arm of the affiliated company.

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Inspiration



“Exploration is the engine that drives innovation. Innovation drives economic growth. So, let’s all go exploring.”

Edith Widder

Connect with us!

Are you eager to know more about the state of the art of lightweight concrete and ceramics?

Are you a professional or a company providing services that LightCoce might need?

Are you an expert in the field of lightweight materials?

Contact us to share your feedbacks and ideas on this page:
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