



AEROCOINS SEEKS THE DEVELOPMENT OF NEW SUPERINSULATING MATERIALS FOR THE CONSTRUCTION SECTOR.

At present, AEROGELS are the most promising materials for the development of new-insulating components in the construction sector.

AEROCOINS, an FP7 project coordinated by **TECNALIA RESEARCH AND INNOVATION**, proposes to create a new superinsulating material by overcoming the two major obstacles which have prevented a wide-spread use of silica-based aerogel super-insulation components in buildings and construction. These obstacles are the poor mechanical properties of silica aerogel and the high cost associated with its production.



Silica aerogels are nanostructured amorphous materials and the lightest solids. They have typical porosities $> 90\%$ and pore sizes between 4 and 20 nm (1,000,000 nm = 1 mm). This makes them the lowest thermal conductivity materials on earth ($\lambda < 0.012 \text{ W m}^{-1} \text{ K}^{-1}$) under ambient conditions. The AEROCOINS project proposes a clever combination of sol-gel chemistry and nanotechnology which will rapidly advance the development of novel superinsulating

aerogel materials. The equivalent thickness of an aerogel-based insulator to achieve the same thermal insulation performance in a building can be as little as half of a conventional commercial insulation. Replacing a standard insulation with the same thickness of an aerogel material will make buildings more energy efficient, reducing the amount of energy consumed for heating and cooling systems. This will reduce the overall energy demand as well as the emission of greenhouse gases.

The European project, AEROCOINS, officially started on the 16th of June 2011, will run for 48 months and has a total budget of 4.3 million euros. It is partially funded by the European Union under the Seventh Framework Programme for Cooperation (3 million euros). The consortium is formed by five technology centers **TECNALIA** (Spain), **ARMINES/MINES ParisTech** (France), **EMPA** (Switzerland), **VTT** (Finland), **ZAE Bayern** (Germany), one university partner **Technical University of Łódź** (Poland), two large companies **PCAS** (France), **ACCIONA INFRAESTRUCTURAS** (Spain) and a renowned SME, **SEPAREX** (France).

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