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France: contract with Nanomakers in nanopowders

press release



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Industrial Merchant activities of Air Liquide

The Industrial Merchant business line manages the production and distribution of **gases in bulk and cylinders**, and provides customers with the applications and services required for their implementation.

Its customers range from tradesmen to major businesses and use **industrial gases** in 5 key sectors: food and pharmaceuticals, automobile and manufacturing, crafts and distribution, materials and energy, and technology and research. For 2010, the Industrial Merchant business line generated revenue of €4,753 million.

Silicon carbide nanopowders

Measuring from 10 to 100 nanometers (1 nanometer is equal to 1 billionth of a meter), **silicon carbide nanopowders** are used industrially to **increase the performance of materials**. They are used to enable savings in the use of raw materials and in the design of new composite materials that help to preserve the environment.

The nanopowders are a high-potential market. More and more manufacturing sectors are including nanopowders in the composition of their products: electronics, optics, manufacturers of mechanical parts, energy, environmental preservation and medicine.

Air Liquide announces that it has entered into a long-term agreement with Nanomakers, a French company specializing in the production of high grade silicon carbide nanopowders.

Air Liquide will supply silane, hydrogen, acetylene, argon and equipments for the first industrial facility operated by Nanomakers, which is scheduled to go into production in late 2011 in Rambouillet (France). The R&D teams at Air Liquide will offer **their scientific expertise** in the areas of gas analysis and purification.

Present today in the French and Japanese markets, Nanomakers produces nanopowders **used in industry** to strengthen the mechanical and thermal resistance materials properties. The company has a partnership with the Commissariat à l'Energie Atomique (CEA) – French Atomic Energy Commission. Gases such as silane, hydrogen and acetylene are injected with other raw materials into a reactor that is confined and protected by an argon atmosphere. A CO₂ laser generates a steady stream of pyrolysis, which produces ultra-homogenous and ultra-pure silicon powders.

François Ténégal, CEO of Nanomakers, commented: *“The reliability of the gases supply chain, the technical expertise of teams and their competency in an area where the safety issues are significant are all factors that contributed to our decision to choose Air Liquide. Today, our business is experiencing strong growth, in terms of both personnel and the conquest of new markets. This partnership will contribute to our own development.”*

Augustin de Roubin, Vice President for Southern and Eastern Europe and a member of the Executive Committee of Air Liquide, said: *“We are delighted to support Nanomakers, an innovative company, in its development, particularly as it begins the process of manufacturing nanopowders in France. High technologies are a growth driver for the Group”.*

www.airliquide.com

Air Liquide is the world leader in gases for industry, health and the environment, and is present in 80 countries with 43,600 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide's activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance.

Innovative technologies that curb polluting emissions, lower industry's energy use, recover and reuse natural resources or develop the energies of tomorrow, such as hydrogen, biofuels or photovoltaic energy... Oxygen for hospitals, homecare, fighting nosocomial infections... Air Liquide combines many products and technologies to develop valuable applications and services not only for its customers but also for society.

A partner for the long term, Air Liquide relies on employee commitment, customer trust and shareholder support to pursue its vision of sustainable, competitive growth. The **diversity** of Air Liquide's teams, businesses, markets and geographic presence provides a solid and sustainable base for its development and strengthens its ability to push back its own limits, conquer new territories and build its future.

Air Liquide explores the best that air can offer to preserve life, staying true to its sustainable development approach. In 2010, the Group's revenues amounted to **€13.5 billion**, of which more than 80% were generated outside France. Air Liquide is listed on the Paris Euronext stock exchange (compartment A) and is a member of the CAC 40 and Dow Jones Euro Stoxx 50 indexes.