

## PRESS RELEASE

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# Air Liquide launches a scientific contest on “Essential Small Molecules”

**Essential Small Molecules** such as O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub> and CO<sub>2</sub><sup>1</sup> embody Air Liquide’s scientific territory. They have an extremely wide variety of physical and chemical properties which make them essential to life, matter and energy. Reinforcing its focus on science for accelerating innovation, Air Liquide launches an annual “Air Liquide Essential Molecules Challenge”.

The first **Air Liquide Essential Molecules Challenge** is open to academic teams, private Research & Development, start-up companies, private or public institutes. They are invited to submit, from the beginning of January 2016, proposals for scientific breakthroughs on three topics related to societal and environmental challenges:

1. “Sunny H<sub>2</sub> in a bottle”: producing hydrogen from water by using solar energy,
- 2 “Small Molecules in my pocket”: finding sponge materials for high density storage and safe supply of gases,
3. “CO<sub>2</sub>, give back your O<sub>2</sub>”: producing O<sub>2</sub> and CO (carbon monoxide) from CO<sub>2</sub> in a sustainable way.

An **Air Liquide Scientific Award of € 50,000** will be granted to each winner in September 2016 and Air Liquide will further fund up to **€ 1.5 million** in joint collaborations with the winners to mature their scientific proposals into market technologies.

Air Liquide’s innovation approach combines science, technologies and new usages of its customers and patients. Science is supported by this Essential Molecules Challenge as well as by the recent **creation of Air Liquide’s m-Lab (molecules-Lab)**, an open scientific community dedicated to Essential Small Molecules.

**François Darchis**, member of the Executive Committee, supervising Innovation, commented: **“The development of Air Liquide activities has, from the very beginning, been inspired and made possible by scientific breakthroughs allowing new production, packaging and usages of Essential Small Molecules. Leveraging science inside the company, as well as with our customers and partners, will allow us to open new markets and thus, accelerate innovation and growth”.**

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<sup>1</sup> O<sub>2</sub>: oxygen, N<sub>2</sub>: nitrogen, H<sub>2</sub>: hydrogen, CO<sub>2</sub>: carbon dioxide

### **Innovation, one of the pillars of the Group's strategy**

- €278 million innovation expenses in 2014
- +300 new patents filed in 2014
- 6,200 employees contribute to innovation around the world, mostly in three entities: Research & Development, advanced Business & Technologies (aB&T), and Engineering and Construction (Global E&C Solutions). They explore new territories, business models, technologies and services, and they support innovation from the idea to market maturity.

### **Air Liquide's Essential Small Molecules**

Essential Small Molecules are essential for life, matter and energy.

O<sub>2</sub>, N<sub>2</sub> and CO<sub>2</sub> are key components in virtually all natural, biological and biogeochemical cycles. H<sub>2</sub> and CO allow the creation and transformation of matter. O<sub>2</sub>, H<sub>2</sub> and He<sup>2</sup> are used for the production, storage and conversion of energy.

**For more information about the Air Liquide Essential Molecules Challenge: [click here](#)**

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World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with more than 50,000 employees and serves more than 2 million customers and patients. Oxygen, nitrogen and hydrogen have been at the core of the company's activities since its creation in 1902. Air Liquide's ambition is to be the leader in its industry, delivering long-term performance and acting responsibly.

Air Liquide ideas create value over the long term. At the core of the company's development are the commitment and constant inventiveness of its people.

Air Liquide anticipates the challenges of its markets, invests locally and globally, and delivers high-quality solutions to its customers and patients, and the scientific community.

The company relies on competitiveness in its operations, targeted investments in growing markets and innovation to deliver profitable growth over the long-term.

Air Liquide's revenues amounted to € 15.4 billion in 2014, and its solutions that protect life and the environment represented more than 40% of sales. 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.

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<sup>2</sup> He: helium