PRESS RELEASE

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Air Liquide announces the 3 winners of the 2018 Scientific Challenge

Three winners were rewarded at the end of the 2018 Scientific Challenge organized by Air Liquide, out of more than 132 proposals from 34 different countries. In the context of this second edition, Air Liquide had invited teams of researchers, start-ups and private or public institutes to submit scientific research projects aimed at improving air quality and fighting climate change using the Small Essential Molecules such as oxygen, nitrogen, hydrogen, carbon dioxide, etc.

The three winners received the "**Air Liquide Scientific Prize**" endowed with 50 000 euros. In addition, the winners have signed a partnership agreement with the Group that will enable them to receive 1.5 million euros in funding, shared between the three projects, to **develop their scientific proposals and transform them into market-ready technologies**. For each topic, the winners are:

- *"**Lower-CO_2 H_2"** - How to produce cost competitive hydrogen while reducing greenhouse gas emissions?*
  José Manuel Serra Alfaro from the Instituto de Tecnología Química (a joint research center created by the Universitat Politècnica de València and the Consejo Superior de Investigaciones Científicas) in Spain. The partnership will focus on the **development of a new process using a reactor membrane to produce purified H_2 in a single step**.

- ***"H_2 is coming"** - How to use hydrogen to avoid greenhouse gas and air pollutant emissions in fossil fuel based industrial processes?*
  Christophe Coperet from the ETH Zurich in Switzerland. The partnership will focus on the **development of efficient catalysts for the use of H_2 and CO_2 to produce methanol**.

- ***"Sustainable Farm to Fork"** - Can the dietary needs of 7.6 billion people be met in an affordable, healthy and sustainable manner?*
  Wenbiao Shen from the Nanjing Agricultural University in China. The partnership will focus on the **use of water enriched with H_2 in agriculture to reduce the use of fertilizers and pesticides**.

François Darchis, Senior Vice-President and member of the Air Liquide Group Executive Committee, supervising Innovation, said: ***"This scientific challenge strengthens the Group's cooperation with the international scientific community (universities, institutes of technology, laboratories...). It perfectly illustrates the Group's open innovation approach. This challenge enables us to continue expanding our knowledge related to Small Essential Molecules, with the aim to invent new solutions reducing carbon footprint and addressing the key challenges facing society."***

For more information on the #2018AirLiquideScientificChallenge, click here.

The three laureates were selected by a jury of 7 members, headed by Air Liquide Vice-President Research & Development, and composed by **Professor Jean-Pierre Sauvage**, Emeritus Professor at the University of Strasbourg, and winner of the 2016 Nobel Prize in Chemistry for the design and synthesis of molecular machines, **Professor Pamela Ronald,** Plant pathologist and geneticist at the University of California, Davis, Fellow of the American Association for the Advancement of Science (AAAS), and five Air Liquide Fellows, distinguished in the Group's internal recognition program.

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A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with approximately 66,000 employees and serves more than 3.6 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the company's activities since its creation in 1902.

Air Liquide's ambition is to be a leader in its industry, deliver long term performance and contribute to sustainability. The company's customer-centric transformation strategy aims at profitable growth over the long term. It relies on operational excellence, selective investments, open innovation and a network organization implemented by the Group worldwide. Through the commitment and inventiveness of its people, Air Liquide leverages energy and environment transition, changes in healthcare and digitization, and delivers greater value to all its stakeholders.

Air Liquide's revenue amounted to 21 billion euros in 2018 and its solutions that protect life and the environment represented more than 40% of sales. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, EURO STOXX 50 and FTSE4Good indexes.