ARC, Pirelli Labs sign deal to develop micro fuel cell for industrial applications

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Pirelli Labs S.p.A., of Italy, and Alberta Research Council Inc. (ARC) signed a joint agreement to develop ARC's micro solid oxide fuel cell technology. The one-year agreement will focus on applying Pirelli's patented process which enables a hydrocarbon-based fuel to be supplied directly into ARC's fuel cell stack to simplify its design.

A number of advantages will be realized by combining the two technologies, including the absence or need for a fuel processor and a lower operating temperature for the fuel cell unit. Potential applications for the fuel cell include as a backup power supply in remote telecommunication centres for oil and gas well instrumentation as well as a power source for cathodic protection to protect pipelines from rusting.

"This agreement with Pirelli Labs will help ARC further develop our fuel cell technology and get it closer to the marketplace," says Paul Layte, vice-president, Engineered Products and Services, ARC. "Developing and helping industry deploy cleaner, alternative energy technologies such as fuel cells is one of our core businesses in serving the energy sector and is aligned with the province of Alberta's priorities."

As part of the agreement, both organizations will send researchers to each other's labs to conduct research and ARC will support a student research position at Pirelli Labs in Milan, Italy.

"We are pleased to share Pirelli Labs' long expertise in the fuel cells

field with a prestigious research centre like ARC", says Enrico Albizzati, CEO of Pirelli Labs Materials Innovation. "With the combination of the respective technologies and know-how, Pirelli Labs and ARC will be able to jointly develop an innovative and unique fuel cell system with many potential industrial applications."

Both technologies are covered by patents and their combination opens the way to the creation of the stack devices with power up to 1000 W, with important advantages such as fuel versatility, a substantial increase of an electrolyte surface area per volume unit and very fast start-up times. These characteristics are fundamental for applying micro solid oxide fuel cells devices in non-traditional applications.

The original anode materials provided for this agreement were jointly developed by Pirelli Labs S.p.A. and the Istituto di Ricerche sui Metodi e Processi Chimici per la Trasformazione e L'Accumulo dell'Energia of CNR (Messina).

The Alberta Research Council Inc. (ARC) delivers innovative science and technology solutions to meet the priorities of industry and government in Alberta and beyond. Integrated multi-disciplinary teams help customers and partners take technologies from the laboratory to the field, strengthening their competitiveness and sustainability. ARC accelerates the development of products, processes and services in the energy, life sciences, agriculture, environment, forestry and manufacturing sectors.

Pirelli Labs represents the Pirelli Group's pole of technological excellence. Established in 2001 with a total investment of around 135 million Euros, the research centre extends over an area of 13,000 square meters at Milano-Bicocca and is active in the fields of photonics, new materials and technologies for the environment.

Source: Alberta Research Council Inc.