28 APRIL 2021

Platinum-based resistance temperature detectors (RTDs) are ideal for temperature measurement in challenging applications, including low temperature. Picture source: Heraeus

HEALTH WORKER

Platinum applications are enabling effective and innovative health care delivery through the COVID-19 pandemic and beyond

Cold-chain monitoring and ultra-low freezer storage of biologicals and vaccines for the pharmaceutical and health segment has increased in importance. Yet, as the COVID-19 pandemic has demonstrated, providing a cold supply chain for temperature-sensitive pharmaceutical products, such as vaccines, can be a major logistical challenge.

With the COVID-19 vaccination programme gathering pace, vaccine distribution has seen demand for platinum-based temperature sensors grow, with manufacturers such as Heraeus, the technology group, increasing production capacity as a result.

Platinum-based resistance temperature detectors (RTDs) are ideal for temperature measurement in challenging applications, including low temperature. Their linear characteristics allow precise temperature sensing over a wide range, from -200 to +1000 °C. Uses include the monitoring of: production-process temperature stability; cryo-transport box temperature during transport; and ultra-low storage cooler temperature.

Platinum RTD sensors are highly accurate, even after years of service, with a typical lifetime of 15 to 20 years. For the vaccine programme, this translates to secure monitoring and temperature control for the complete cold-chain, from shipment to storage.

Sustainable health care

Meanwhile, in a world first, platinum in hydrogen fuel cells is soon to be used to demonstrate the potential for fuel cell electric vehicles (FCEVs) to assist with the decarbonisation of mobile medical services.

In Japan, the Red Cross Kumamoto Hospital and Toyota Motor Corporation (Toyota) have agreed to begin testing a FCEV mobile clinic, which will use hydrogen to generate electricity, by the summer of 2021.

The world's first FCEV mobile clinic is being developed in Japan. Picture source: Toyota Motor Corporation

In addition to zero-emission treatment and transportation of patients, the Red Cross Kumamoto Hospital and Toyota believe that the FCEV mobile clinic could offer a wide range of services, including supplying electricity to blood donation buses and medical examination vehicles, travelling to less-populated areas as a mobile clinic and acting as a mobile COVID-19 polymerase chain reaction (PCR) testing vehicle.

What is more, it is thought that FCEV mobile clinics could assist when medical services are needed in disaster-affected areas, where they could also be used to provide emergency power to homes and evacuation centres.

In South Africa, seven hydrogen fuel cells have been deployed at a field hospital in Pretoria as the primary source of power, further demonstrating their versatility in reliably providing carbon-free power at short notice.

The field hospital was set up towards the end of last year as part of the South African government's response to the COVID-19 pandemic, which highlighted the need to respond with speed and flexibility in providing high care facilities for those who need them most.

Contacts:
Brendan Clifford, Institutional Distribution, bclifford@platinuminvestment.com
Trevor Raymond, Research, traymond@platinuminvestment.com
David Wilson, Research, dwilson@platinuminvestment.com
Vicki Barker, Investor Communications, vbarker@platinuminvestment.com