

Umicore on Mars

Umicore's operations not only span all of our blue planet's five continents, its germanium substrates used in high-efficiency solar cells have also made it to Mars, the famous red planet of our solar system, to boldly go where no Umicore product has ever gone before.

Our germanium substrates constitute the base material for the solar panels used in NASA's Mars Exploration Rovers, the two mobile robots which have been exploring Mars since the beginning of 2004. Initially, the mission of Spirit and Opportunity was to last only 90 Mars days (92 days back here on earth) but both robots continue to be operational, partly thanks to the solar cells, which provide the lifeblood for the mission. Four years on, Spirit and Opportunity got company from a new NASA buddy - the Phoenix Mars Lander - which successfully completed the 422 million mile voyage on May 25, 2008 touching down in Vastitas Borealis, the arctic plains of Mars.

The power for the lander comes from a two-wing solar array (total surface amounting to 4.2 square metres) converting solar radiation to electricity. And yes, the solar cells use Umicore's germanium substrates as their base material. The landing site in the far north of Mars gives Phoenix maximum exposure to sunlight.

Its mission: to investigate a site near the north polar permanent ice cap of the planet using a robotic arm, study the history of water in all its phases, determine if the Martian icy polar soil could support life and monitor the Martian weather from a polar perspective.

Climate change? Polar expeditions? Back here on earth, Umicore headed the fund raising effort to build the world's first zero emission Antarctic polar station. The purpose of the station is to study climate change on earth from a polar perspective. As it so happens, scientists working on the Phoenix mission actually travelled to Antarctica for a five-week scientific expedition because of the south pole's similarity to Mars: no plants, no animals, just rocks, soil and ice near the soil.



Foto: Courtesy of NASA/JPL