Space sensor helps produce ‘greener’ glass

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What has making glass in common with space exploration? The special technology to measure oxygen atoms outside space vehicles is now being used in the glass industry to produce super-efficient energy-saving windows.

With modern architecture featuring large glass facades, it has become important to improve the insulating characteristics of glass.

The windows must protect the interior against heat loss during cold weather and against overheating on warm summer days.

“By using sensor technology from space this has been possible,” explained Frank Hammer, founding member of the German company ESCUBE, which developed the special instrument initially for spaceflight.

Through MST Aerospace, the German technology broker of ESA’s Technology Transfer Programme, contacts were established with a glass manufacturer.

Today, the sensor is mounted outside the International Space Station and used in a German glass factory.

“For space, the sensor was developed to measure atomic oxygen, known for its erosion effect and for degrading optical surfaces,” said Mr Hammer.

“In the glass industry the technology is now used to control the industrial glass-coating process to obtain improved insulating properties.”

The complex coating procedure requires reliable and precise monitoring to control the process.

“The gas sensor developed to handle the harsh space environment turned out to be the right solution to handle the difficult glass-production conditions of high temperatures and reactive gasses,” added Mr Hammer.

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