



### TECHNOLOGY DESCRIPTION

The KINOTEX® pressure/displacement sensor is a special polymer foam that works by detecting a change in energy intensity in and around illuminated integrating cavities. Deformation of the cavities by an external influence, e.g. pressure, induces a change in the illumination energy intensity (optical signal). Both the sensitivity and the compliance of the sensor can be engineered to meet a broad range of user requirements. In addition, KINOTEX® can be fabricated in arbitrary shapes.



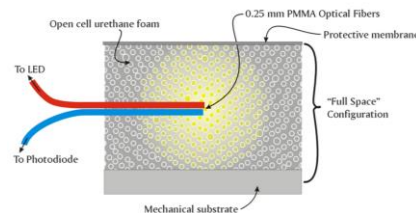
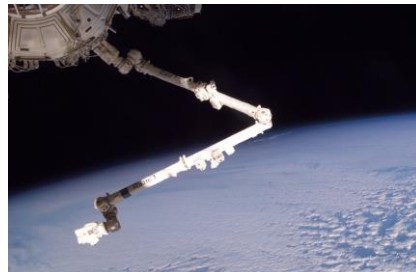
### INNOVATIVE ASPECTS

A key contribution from the Canadian Space Agency to the International Space Station are the Space Station Remote Manipulator System (Canadarm2) and the Special Purpose Dexterous Manipulator (SPDM or Dextre). These advanced robotic systems can perform tasks that require human dexterity but lack one critical feature: a sense of touch. In the absence of tactile feedback, the robotic arms can collide with the astronauts when working in close proximity. Recognising this, the KINOTEX® technology was developed. KINOTEX® is a robust and compliant sensor that emulates human touch, and can cover the entire robotic limbs like a skin to provide tactile feedback. KINOTEX® senses pressures from 0.1 kPa (0.015 psi) to over 200 kPa (29 psi) and senses deformations as small as 0.025 mm (0.001 in).



### TECHNOLOGY READINESS (in space application)

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COUNTRY OF ORIGIN

Germany

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TAGS

#sensor

#tactile

#foam

#pressure

#fibre optical

#compliant

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TECH CARD

