



Case study: gSKIN[®] Heat Flux Sensors for measurements at cryogenic temperatures

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Measuring thermal energy transfer at temperatures below -150°C becomes increasingly important in many applications like:

- Scientific instruments
- Insulation properties of liquid nitrogen tanks
- High precision industrial fabrication equipment

Common heat flux sensors show drastically reduced sensitivity at cryogenic temperatures. Up to now, there were no sensors on the market for applications in such extreme environments.

greenTEG developed a heat flux sensor based on a new material, which still has up to 30% of its room temperature sensitivity when used at cryogenic temperatures. The sensor itself is very stable against thermomechanical stress. No sensitivity changes were observed after the highly accelerated stress-aging test during which the sensor was alternated 12 times from 80°C water to liquid nitrogen of -196 °C and back.

Watch the stress test on Youtube: https://www.youtube.com/watch?v=6CrWULNHE_o

