

# Atomic Oxygen Textured Surfaces for Blood Glucose & Other Analyte Monitoring



**Light Pointe MEDICAL, INC.**

## TECHNOLOGY

As a result of NASA's research on low Earth orbital atomic oxygen interactions with spacecraft materials, this technology was discovered and thereafter developed in collaboration with Light Pointe Medical. This process produces microscopic cones on the tip surface of optical fibers to allow the rapid measurement of blood glucose and other analytes. The texturing provides a separation of red cells from blood plasma, increases the surface area on the fiber tip with less blood volume required, and provides a faster measurement response time at a low sensor cost. The cones are coated with reagents and chemicals to provide an accurate color change measurement of blood glucose level.



## COMMERCIAL APPLICATIONS

- ◆ Blood glucose monitoring for point-of-care and home use.
- ◆ Measurements of other blood analytes, and DNA detection of biological, pollutant and other medical and non-medical agents.

## SOCIAL / ECONOMIC BENEFITS

- ◆ Significantly lower the cost of blood glucose monitoring and the testing of other analytes.
- ◆ Provide faster, easier, less painful, and low-cost glucose monitoring for people with diabetes in underserved world-wide markets.
- ◆ Bring DNA medical and non-medical diagnostics to a wider market.
- ◆ Less blood is needed for testing and blood samples can be taken from less sensitive places on the body.
- ◆ This technology will allow for more frequent monitoring and therefore better potential for control of blood glucose levels.

*Light Pointe's blood glucose sensor with atomic oxygen-textured PMMA optical fiber*

## NASA APPLICATIONS

- ◆ This new technology allows for small volume blood sampling, rapid testing of blood glucose (and other analytes) at a very low cost per test.

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