TECHNOLOGY

Integrated Sensor Monitoring the Allowable Heat Exposure Time for Firefighters

OVERVIEW

The gear donned by firefighters has advanced to a high level of heat protection with the use of modern materials. These improvements in insulating capabilities have resulted in an increased delay time between the thermal insult and its effects as heat energy is transported from the gear outer surface to the inner layers in contact with firefighter skin. This time delay has caused problems since firefighters are not aware of the heat or energy insult as it occurs but must survive its long-term effect at a later time (2-3 minutes later).

Researchers at the University of Maryland have developed an algorithm that, in conjunction with gear outer shell temperature sensors, provides real time predictions of the maximum exposure time allowed under the given conditions. Further embodiments of the invention include an LED-based in-visor system to relay exposure times and warning signals to the firefighters. The system also records the thermal exposure history and the predicted internal temperature evolution for off-line analysis in case of skin burns.

For more information please contact the Office of Technology Commercialization at the University of Maryland, at 301 405-2924 or otc@umd.edu

CONTACT INFO

UM Ventures
0134 Lee Building
7809 Regents Drive
College Park, MD 20742
Email: umdtechtransfer@umd.edu
Phone: (301) 405-3947 | Fax: (301) 314-9502

Additional Information

INSTITUTION

University of Maryland, College Park

CATEGORIES

- Devices
- Sensors/Monitors

EXTERNAL RESOURCES

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