

NPPTL's R & D Program for End of Service Life

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NIOSH/NPPTL has supported an end-of-service life (ESLI) program for air purifying respirators. The goal has been to demonstrate ESLI capability in air purifying respirators by developing and integrating chemical sensors into respirator cartridges to determine when 10% of the cartridge life remains. NPPTL has combined forces with others such as the Air Force Office of Scientific Research, Carnegie Mellon University (CMU), and University of California San Diego (UCSD) to produce synergist research. The electronic sensors, developed with CMU, used conductive polymers, gold nanoparticles, and gold nano clusters as the sensing films. The optical system, developed with UCSD, used porous silicon as the sensing material.

This presentation will outline the development and results of electronic and optically based sensors as ESLI systems.