

Western University

Scholarship@Western

Inspiring Minds – A Digital Collection of
Western's Graduate Research, Scholarship and
Creative Activity

Inspiring Minds

September 2023

How does a tiny beam of light make a nuclear power plant safer?

Yongqiang Deng Mr.

The University of Western Ontario, ydeng92@uwo.ca

Follow this and additional works at: <https://ir.lib.uwo.ca/inspiringminds>

Citation of this paper:

Deng, Yongqiang Mr., "How does a tiny beam of light make a nuclear power plant safer?" (2023). *Inspiring Minds – A Digital Collection of Western's Graduate Research, Scholarship and Creative Activity*. 430.
<https://ir.lib.uwo.ca/inspiringminds/430>

How does a tiny beam of light make a nuclear power plant safer?

A fission reactor to a nuclear power plant is a heart to a human body. The safe and effective operation of a plant depends on the health of the reactor. One can easily monitor the conditions of the heart through a cardiac exam through blood pressure (via blood pressure gauge) and heart sounds (stethoscope). It is more difficult to assess the conditions of a reactor due to its high-temperature and high-pressure operational environments. My research is to investigate innovative ways to acquire critical information on the reactor using Fiber Optic Sensors (FOSs) by shining a tiny beam of light into otherwise difficult-to-reach places, to unveil the true conditions of the reactor. Yes, my research would make it possible to enhance the safety of nuclear power plants through a tiny beam of light.