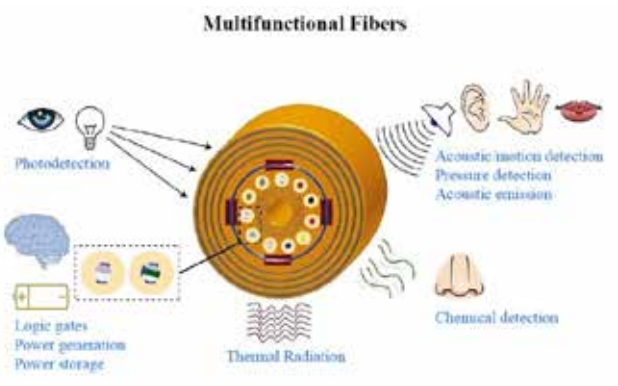
Advanced Functional Fibers and Fabrics

LUX PHOTONICS CONSORTIUM SINGAPORE

Technology Overview

§ It enables the seamless integration of multiple of functional components into one flexible fibre with precise control over nanometre-level architecture and composition
§ Allows an all-in-fibre solution, achieving multiple functionalities
§ The ability to see, hear, and sense their surroundings, communicate, store and convert energy, monitor health, control temperature, and many more



Technology Features

§ All-in-fiber solution to achieve multiple functionalities in a single flexible fiber
§ Lego-like template to enable the integration of many components in a single flexible fiber
§ Industry scale-up capability with kilometer length from one fabrication to achieve high production yield and low cost
§ Breathable for constructing multi-dimensional fabrics for wearable electronics
§ Washable and mechanical stable

Potential Applications

§ Wearable electronics, such as health and weight management, exercise and training management, thermal regulation and management, active cooling, etc.
§ Large-area sensing and monitoring, such as environmental sensing including optical sensing, sound sensing, temperature sensing, pressure sensing, gas and chemical sensing.
§ Energy generation from heat, motion, and light
§ Military and defense applications

Benefits

§ Access to the state-of-the-art research outcomes
§ Engage collaboration on product-driven research and development
§ High-tech consultation, including material, device, characterization and system

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