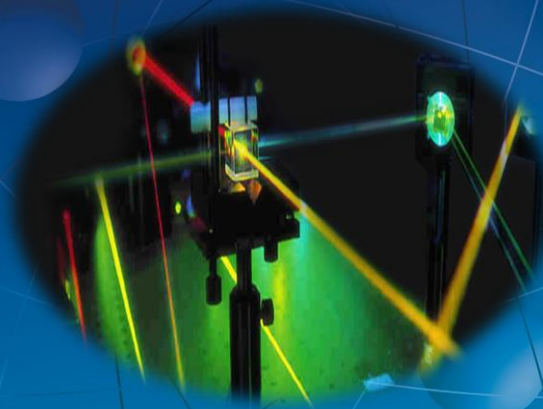


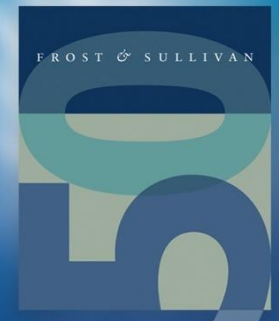
Microelectronics TechVision Opportunity Engine



**Development of Next Generation of
Optoelectronic Devices**

D777-TV

November 13, 2015



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Innovation Ecosystem

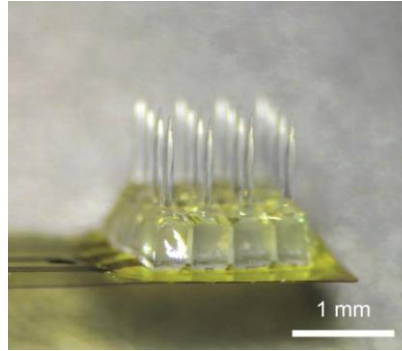


Development of Optoelectronic-Enabled Neural Communication

Brown University, Rhode Island, USA

Technology Profile

- Researchers from Brown University have developed cortical microprobe—a new type of optoelectronic implantable device that can stimulate neurons as well as record the effects of the stimulations.
- ...



Source: Nurmikko Lab/
Brown University

Future Plans

Researchers are working on developing this cortical microprobe for the use of chronic implants in non-human organism such as mice with the ability to control the brain cells and record the brain cell activity wirelessly.

Market Opportunity

- ✓ Health care
- ✓ Robotics
- ✓ BCI (Brain-computer interface)

Impact and Opportunities

Competing Aspects

- Transparent
- Miniaturized implantable device
- ...

Innovation Attributes

Development of a cortical microprobe that can optically stimulate neurons in specific patterns. ...

Wide-scale Adoption

A precise electronic device capable of sensing and recording brain cell activities could be developed and commercialized by ..

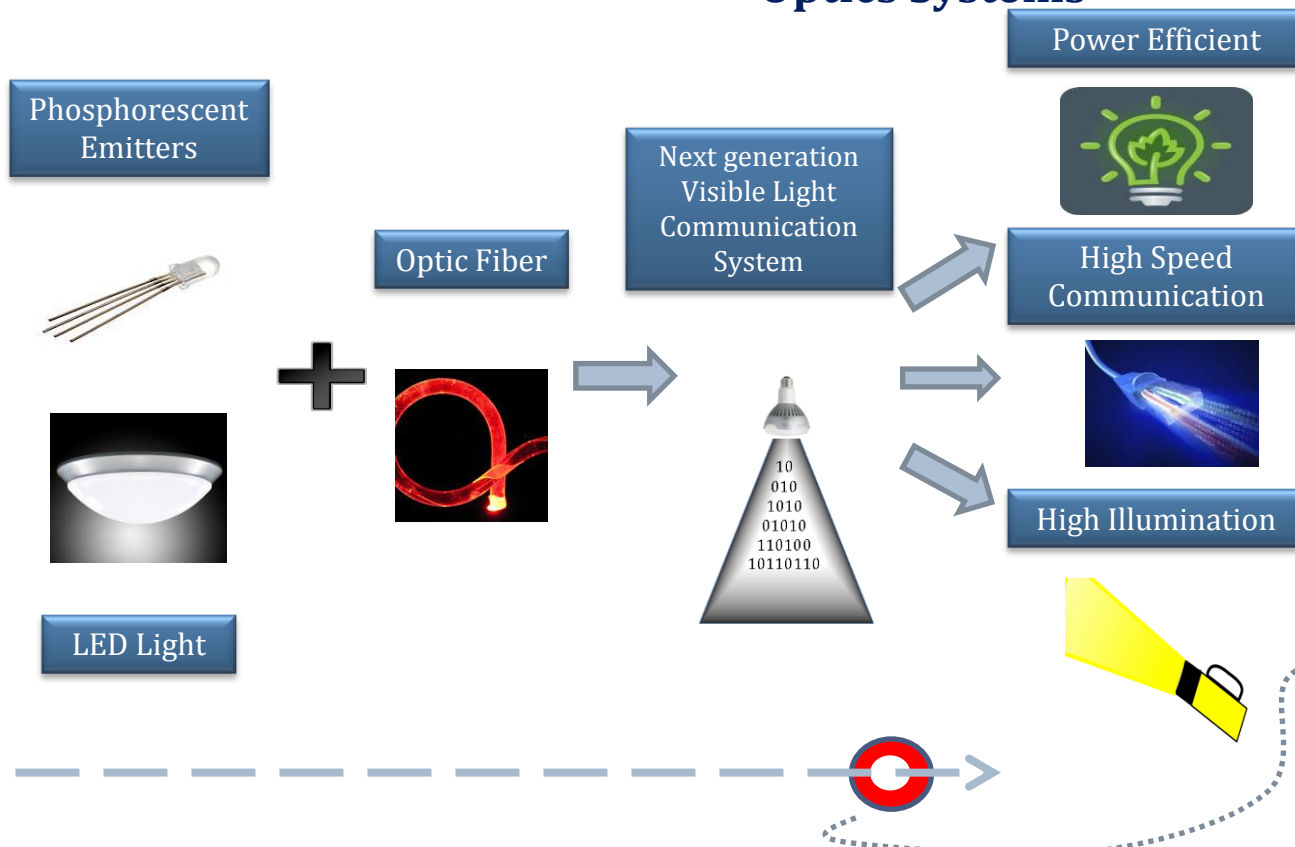
Technology Convergence and Analyst Insights



Technology Convergence Scenario

Next-Generation Electronic Devices using Optoelectronics Devices

Next Generation Visible Light Communication Devices using Fiber Optics Systems



Industry Initiatives

- International Business Machines (IBM) Corporation are developing Visible light communication system using fiber optic distributed system. ...

Year of Impact -

Development and commercialization of next generation visible light communication systems can be expected by .

Next generation visible light communication provides:

- High speed communication with less loss of data
- High performance at low-power consumption
- High level of illumination

Key Contacts

