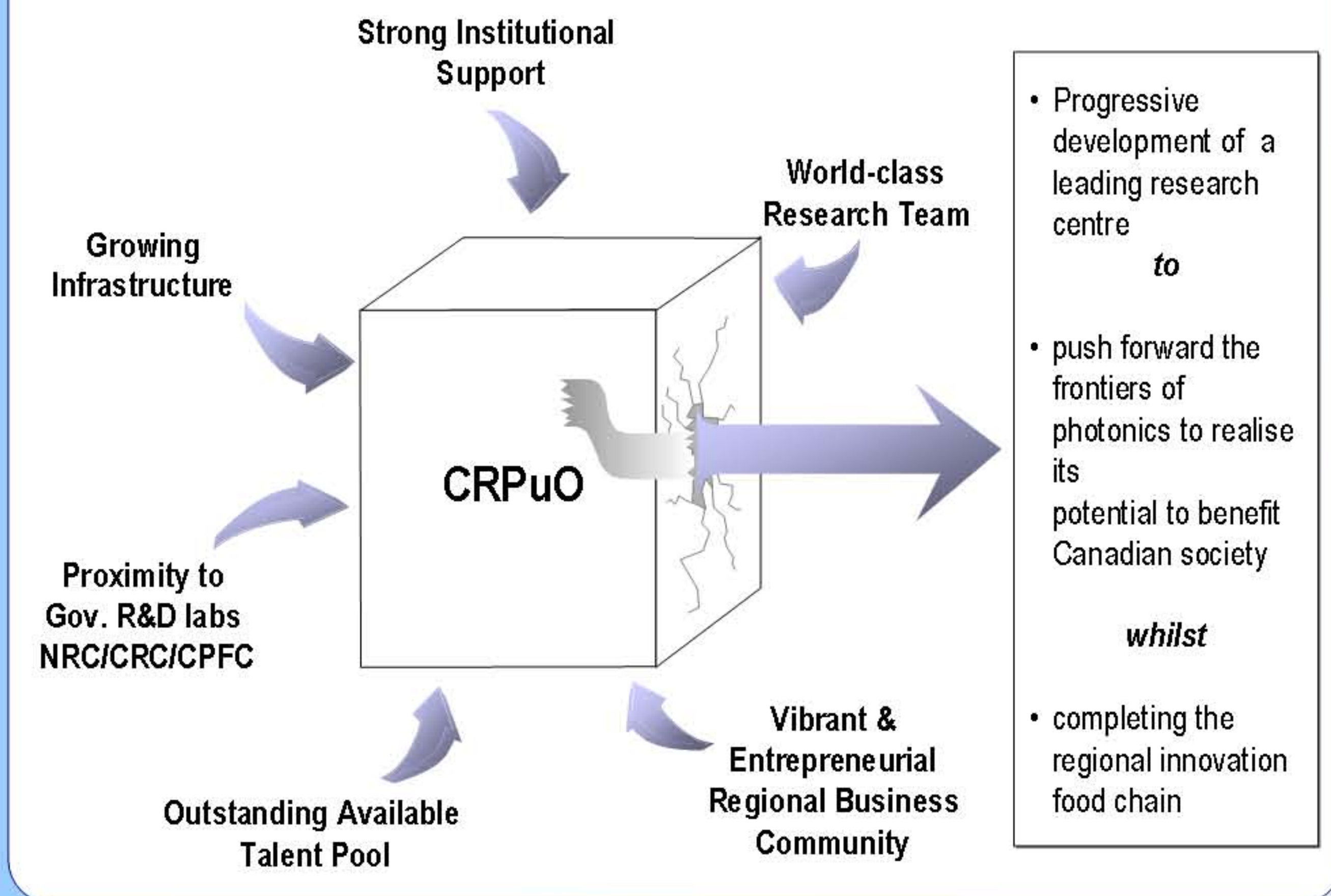


## Conceptualisation of the Opportunity



## What is the CRPuO?

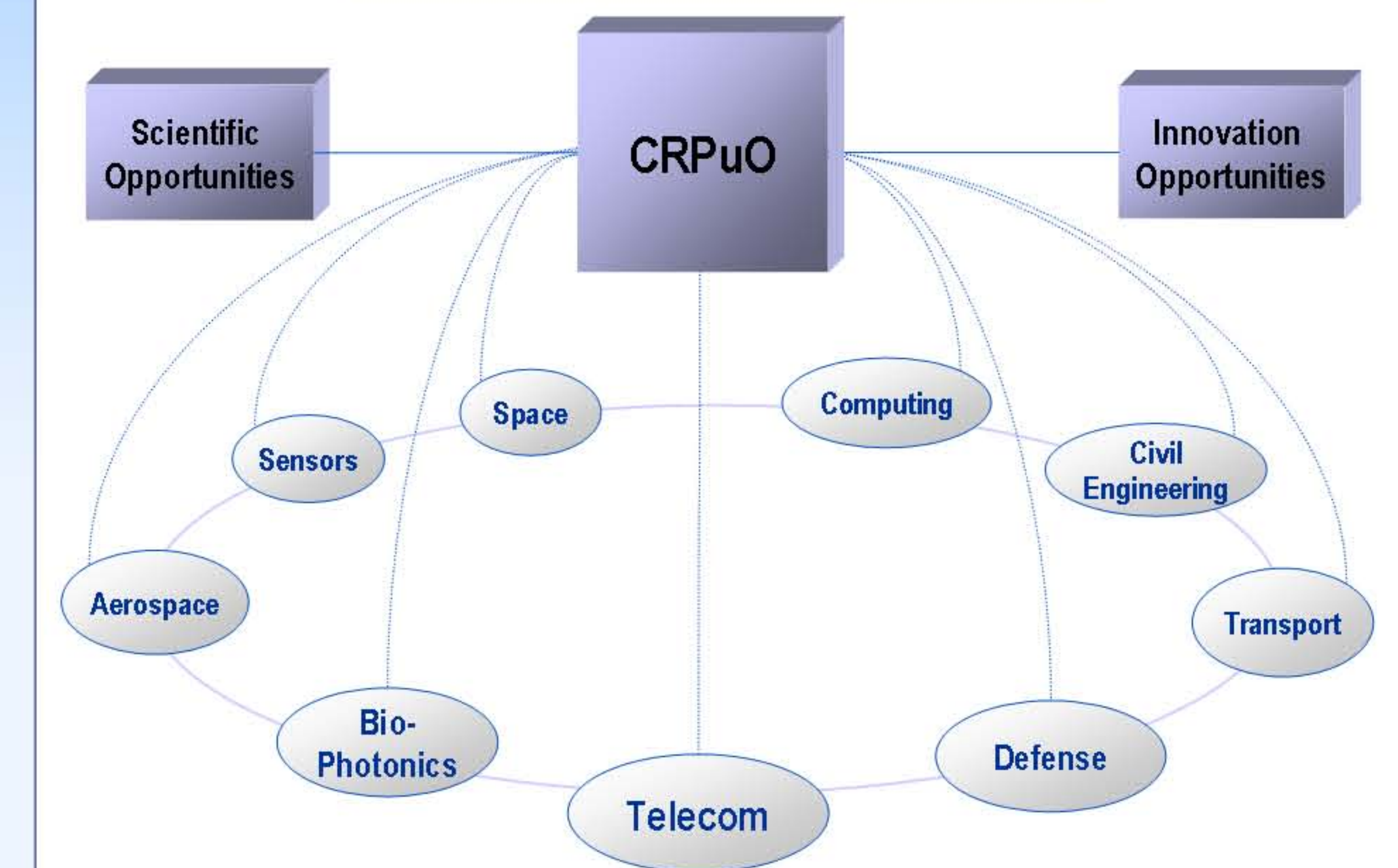
**A multi-disciplinary centre that fosters the cross-disciplinary research required to address new applications of photonics in every facet of life**

- Founded on existing strengths of Science, Engineering and Medicine
- Ideally positioned to push the envelope on innovation in the field of photonics
- Catalyst of the vigorous photonics activities in the Ottawa Region

## PHOTONICS

**Generation, manipulation, transmission and detection of light**

## Circle of Industry Targets



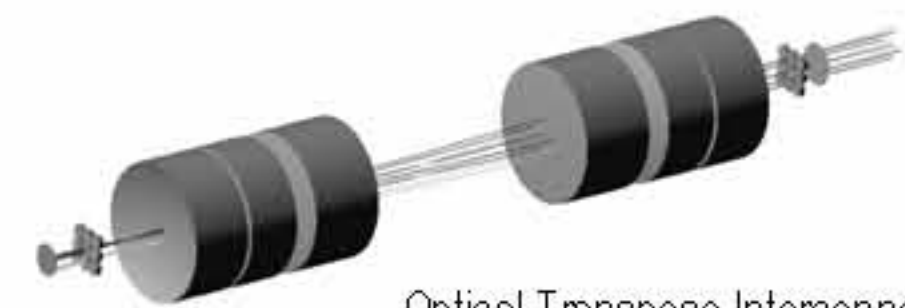
## Research Areas

• **Biophotonics:** The tool of choice for interacting with biological systems from the molecular to the macroscopic regime



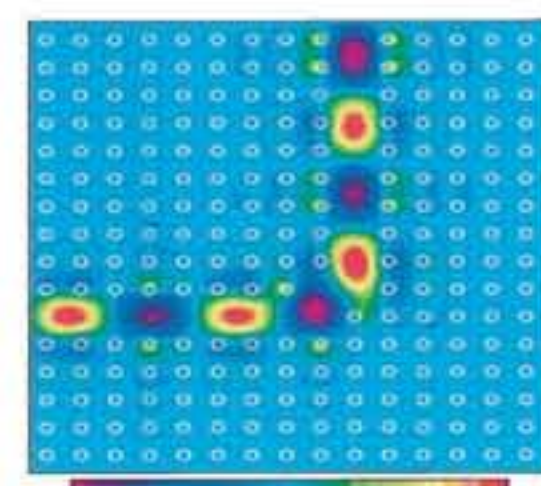
Artificial corneas

• **Communications & Networks:** Agile photonic communication networks with reduced bottlenecks, increased throughput, and managed optical packets



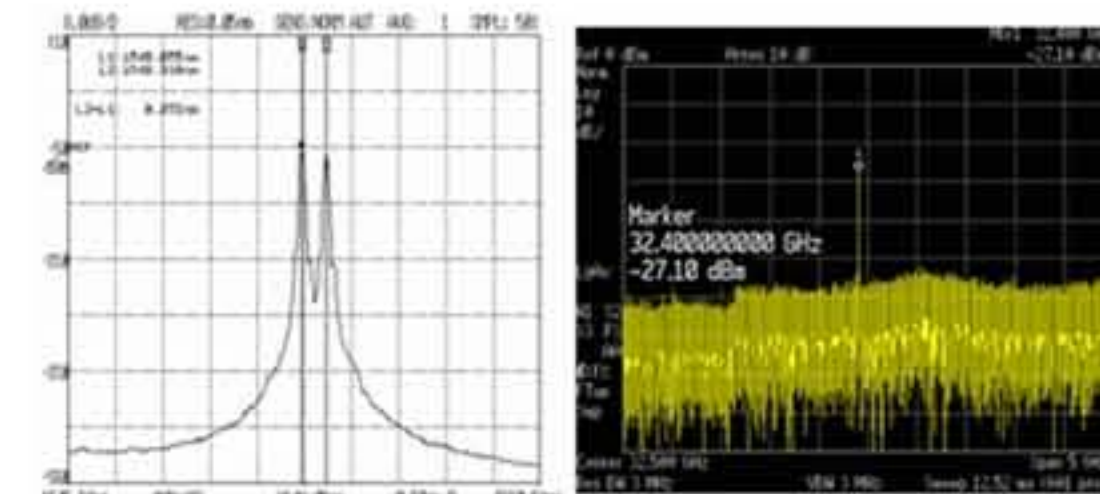
Optical Transpose Interconnect

• **Devices & Technology:** A foundation for the design and development of new active integratable photonic devices based on various material platforms



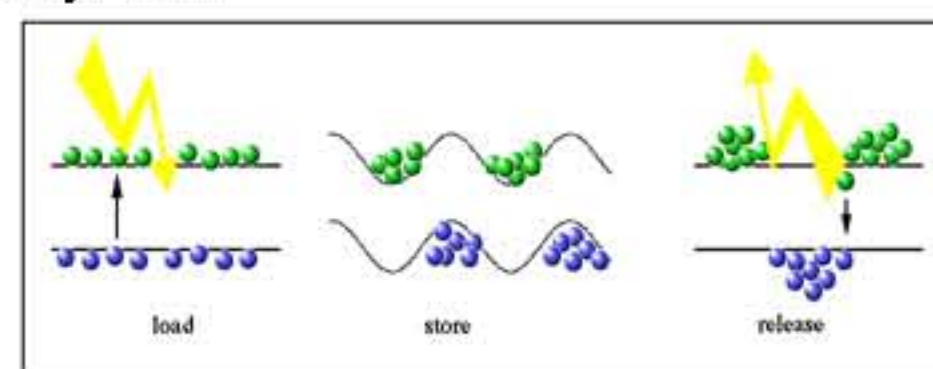
2D Photonic Crystals

• **Microwave Photonics:** Pushing the frontiers of ultra-fast and ultra-high-intensity photonics



Photonic generation of microwave signals

• **Photonic Science:** High precision (nuclear) spectroscopy, attophysics, quantum and classical many-body theory, etc.



• **Sensing Systems:** Innovative, enabling photonic sensing technologies based on novel waveguiding and sensing materials



Fibre-optic pressure sensor

## Research Interactions

**Extensive collaboration and partnerships with:**

• Canadian and foreign universities



• Government R&D laboratories and facilities



• Industry



• Canadian research networks



**Funding from:**



and many more...

## What we strive for

**World leading research:**

- Extensive international involvement
- Graduate program in photonics
- Outreach program

**Facilities:**

- Consolidation in a single site
- Comprehensive network test bed
- Comprehensive laser park & optical laboratory suites
- High performance scientific computer facility
- Sensing networks testbed

**Multisector industrial relevance:**

- Flourishing financial support
- Major industrial collaboration
- Close to start-ups
- Part of a vigorous local economy
- Commercialisation of products

## A Unique Team

• **Breadth of expertise**

- Physics, Engineering, Chemistry, Biology, Medicine

• **World class senior team with core expertise in place**

- 300+ Years of experience
- Awards – 8 CRC's, Herzberg Gold Medal, Her Majesty Queen Elizabeth II: Golden Jubilee Medal, Endowed Chair
- Strong industrial / academic collaboration record
- Capability to develop and implement multi-market, multi-faceted photonic solutions