Texas A&M Integrated Photonics Systems Center (TIPSC)

Lead Contact:

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Key Participating Units:

College of Engineering/Texas A&M Engineering Experiment Station
College of Science
Texas A&M Health Science Center

Anticipated Request Amount ($): $1,500,000

Executive Summary

We propose to create a state-of-the-art integrated photonics systems center at TAMU. The Texas A&M Integrated Photonics Systems Center (TIPSC) will strengthen cross-collegiate collaboration in the rapidly expanding area of integrated photonics, with applications in high-speed data communication, computing, bio-chemical sensing, imaging, lighting, transportation systems, surveillance, and astronomy. This center will have a dramatic impact on the research enterprise by increasing the competiveness of both individual investigator grants and planned large center grant initiatives from funding agencies such as DoD, DoE, NASA, NSF, SRC …, as well as enhancing student research, training, and education. The TIPSC facility will provide TAMU PIs access to labs with the advanced equipment required to develop advanced photonic systems. One key equipment is an Anritsu MP1800A Bit Error Rate Tester, which will enable characterization of the PIs' photonic data communication systems used in applications such as mega-datacenters and emerging wideband wireless systems. Another is a Keysight 81600B tunable laser, which will be utilized in projects spanning multiple applications, such as optical biological detection and identification at the molecular level.

The TIPSC facility includes PIs from the Colleges of Engineering, Science, and Health Science Center. These PIs have a proven federal and industrial funding record and currently have projects that require advanced photonic measurement capabilities. The TIPSC will also feature educational and outreach activities for promoting collaboration among users and training students and scientists. TIPSC experimental facilities will include the PIs labs in the Wisenbaker Engineering and Mitchell Physics buildings. TIPSC will have a dramatic impact on TAMU photonics research, leading to enhanced competitiveness for federal and industrial funding and establishing a center of excellence in the region.