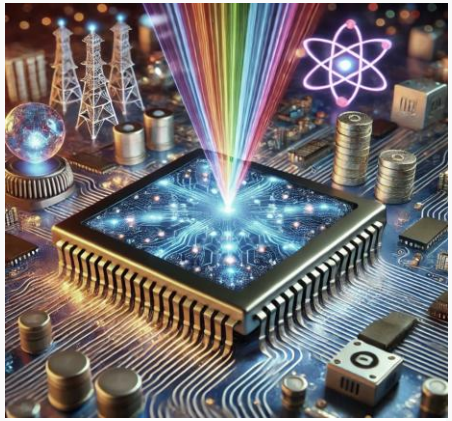
High Resolution Wavelength Meter

Based on the PIC version of a Mach-Zehnder interferometer (MZI)



For illustration purpose only

Positive Impact

- Miniaturization and Stability
- Overcoming Environmental and System Noise
- Enabling New Levels of Precision and Resolution

Problem

Current electronic and free-space optical systems are unable to achieve the required precision for next-generation applications in quantum physics, advanced metrology, and telecommunications. They are fundamentally limited by noise, drift, and crosstalk, which prevent them from reaching resolutions below a wavelength shift of 1 fm.

Initial Validation

This is a 19-inch industrial rack system with a technology readiness level of 6.

Solution

This unique technology integrates an optical chip with advanced thermal and mechanical conditioning. This unique combination has set a world record for the most precise wavelength measurement ever recorded.

Technology

→ The technology is based on integrated photonics chips combined with a scanning laser, low noise front-end electronics back-end electronics and algorithms to reach a resolution of 1fm (10^{-15}) on a 1,55 micron (10^{-6}) basic wavelength.

→ All components used are the industrial end subsystems.

Call to Action !!!

We are looking for individuals with entrepreneurial mindset and strong experience in optical system design and development. Interested?

Please reach out at:

entrepreneur@hightechxl.com

Potential Markets

Several markets will be benefitted from this technology such as:

- Advanced Metrology and Industrial Inspection
- Quantum Technology and Sensing
- Spectroscopy and Chemical Analysis

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