The Office of Technology Management

UNIVERSITY OF TEXAS ARLINGTON

Tech ID: UTA 14-49

Snapshot Interferometric Spectroscopic Device

INVENTORS: Dr. Robert Magnusson and Dr. Daesuk Kim

TECHNOLOGY NEED

Understanding the spectroscopy data is important as it records the properties of light over a specific portion of electromagnetic spectrum, which is used to analyze reflective objects. The spectroscopic data for an object vary substantially based on the 3D pose of the object. The 3D pose of an object can also vary as a result of movement or vibration. In addition, the time required to measure stokes vector using spectroscopic data using traditional systems is limited by the complexity of the measurements. It is suitable to have a spectroscopic meter that can measure accurate stokes vector in real time across wide spectral based on the 3D pose of the object.

INVENTION DESCRIPTION/SOLUTION

UTA researchers have developed spectroscopic device based on snapshot polarization-sensitive spectral interferometry. The invention provides stokes vector measurement capabilities for reflective anisotropic objects in few milliseconds with high accuracy. The technology has inherent robustness to external vibration while providing precise and accurate stokes vector measurement without using a vibration-free optical table. In addition, the invention can be used for measuring ellipsometric parameter of reflective objects with thin films or periodic nano patterns.

APPLICATIONS

- Optical test and measurement
- Photonics
- Imaging

KEY BENEFITS

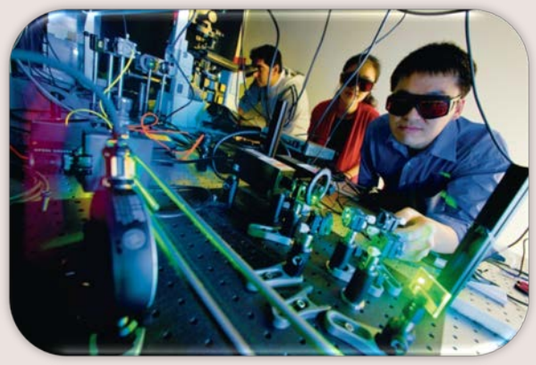
- Real-time measurement of Stokes vector.
- Does not require a vibration-free table for measurement.
- Precise and accurate results.
- Compatible with computing device

STAGE OF DEVELOPMENT

Prototyped

INTELLECTUAL PROPERTY STATUS

Provisional



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