

Optical Vortex Generator and Analysis

Capable of Measuring Optical Vortex Dichroism

Overview

Circular dichroism (CD) is the differential absorption of right- and left-circularly polarized light in chiral materials. Unlike ordinary circular polarization, optical vortices carry orbital angular momentum (OAM) with a topological charge that assumes many integer values. This enables **“optical vortex dichroism,”** a new technique potentially offering **richer material and chirality analysis than standard CD.**

However, **conventional vortex generators allow only low-frequency switching, making sensitive vortex-based measurements difficult due to noise.**

By achieving high-frequency (~50 kHz) switching of vortex handedness, inventor’s method enables precise, noise-resistant measurements, unlocking new opportunities for discovering material properties and chiral signatures beyond conventional techniques.

Product Application

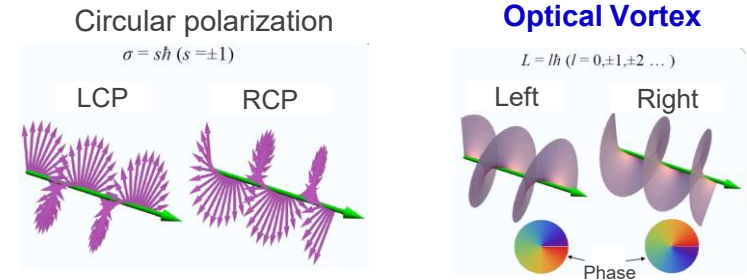
- Optical vortex generator, material analysis instrument

IP Data

IP No. : Not published
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 Admin No.: HK25-001

Features・Outstandings

Optical Vortex...



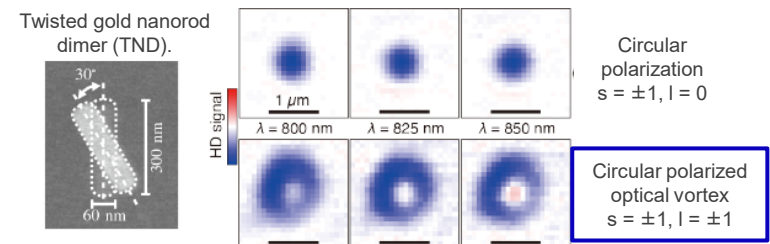
Optical vortex ... A wavefront with a helical structure



A novel form of dichroism using optical vortices is proposed.

The invention

High-frequency optical vortex handedness modulation device



TND dichroism was observed by the invention.

* Spectral measurement is also possible..

* Not with conventional circularly polarization.

We welcome industry and academic partners interested in material analysis or chirality identification with the vortex technology.

Contact

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