# Optical Device

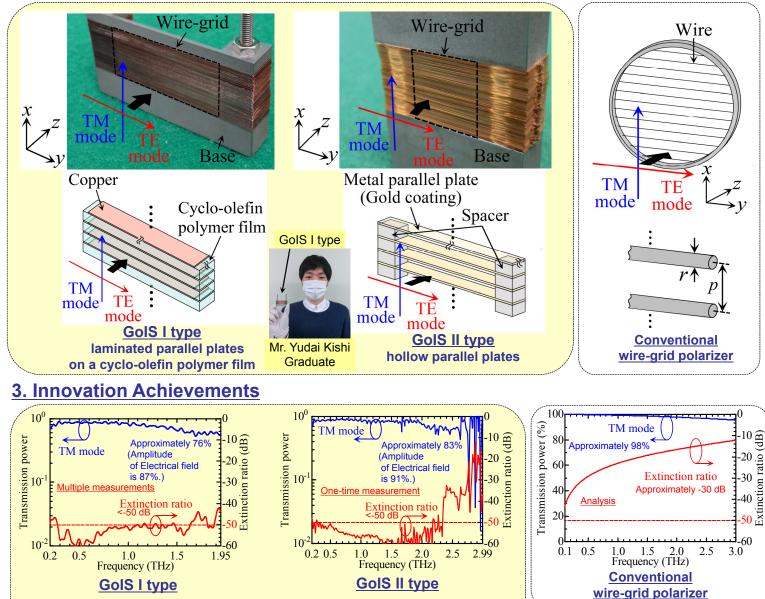
# Novel Terahertz Polarizer for Extremely High Extinction Ratio

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### 1. Background

- The polarizer is one of key components in terahertz polarization sensitive measurements, which often give fruitful information for terahertz technology innovations.
- The sophisticated design of a polarizer with both a high extinction ratio and high transmission power are strongly required.
  - \* The extinction ratio of conventional wire-grid polarizers is 10<sup>-2</sup>~10<sup>-4</sup> (-20 dB~-40 dB), even though the transmission power is approximately 100%. The simultaneous pursuit of both is extremely cumbersome for conventional structures.
- •Robust structures and low cost should be required for the market.

## 2. Sophisticated structures to realize extremely high performance



These measurements were performed by Dr. Masaya Nagai in Osaka University.

- The polarizers, GoIS I and GoIS II, have the sophisticated structures and realize both a high extinction ratio below 10<sup>-5</sup> (-50 dB) and an transmission power of approximately 80%.
- Both Polarizers can be supplied to the market with very robust and low cost compared to conventional wire-grid polarizers.

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