Integrated Optical Field Sampling Platform

Tech ID: 34037 / UC Case 2021-912-0

ABSTRACT

In collaboration with MIT, Researchers at the University of California, Davis have contributed to the development of an Integrated Opitcal Sampling Platform.

FULL DESCRIPTION

Some aspects are directed to an all-on-chip, optoelectronic device for sampling arbitrary, low-energy, near-infrared waveforms under ambient conditions. This solid-state integrated detector uses optical-field-driven electron emission from resonant nanoantennas to achieve petahertz-level switching speeds by generating on-chip attosecond electron burst. Also disclosed is a cross-correlation technique based on perturbation of local electron field emission rates that allows for the full characterization or arbitrary electric fields down to 1 femtojoule, and/or on the order of 500 kV/m, using plasmonic nanoantennas.

For more information or licensing interest please contact MIT Technolog Licensing Office directly: https://tlo.mit.edu/industry-entrepreneurs/available-technologies/integrated-optical-field-sampling-platform

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

- **Optics and Photonics**
  - All Optics and Photonics
- **Engineering**
- **Sensors & Instrumentation**
  - Other

RELATED CASES

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