# OptoSpintronics

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Spintronics is a new dynamic branch of electronics that uses magnetic moment – spin – of charged carriers for data storage and processing. OptoSpintronics is a branch of spintronics where light is used for the investigation and/or control of spin.

Laboratory of OptoSpintronics (LOS), which is headed by Petr Němec, is a joint laboratory of Faculty of Mathematics and Physics, Charles University and Institute of Physics, Academy of Sciences CR that was established in 2011. Starting from 2017, the research performed in LOS is partially supported by European research grant ASPIN awarded within the Future and Emerging Technologies program that is part of the Excellence pillar of the Framework Programme Horizon 2020. Since 2019, the five year EXPRO project "Terahertz and neuromorphic memories based on antiferromagnets'' (TERANEU) is financed by Grant Agency of Czech Republic. The aim of the TERANEU project is to scientifically underpin future development of spintronic computer memories with speeds extended from the gigahertz to the terahertz range and the operation extended from the digital to the neuromorphic mode. For optical research of antiferromagnets members of LOS were awarded several prices including Czech Head Price in 2017 and Werner von Siemens Prize in 2018.

## Selected outputs

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- P. Němec, M. Fiebig, T. Kampfrath, and A. V. Kimel: Antiferromagnetic opto-spintronics. Nature Physics 14, 229 - 241 (2018).