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## Photoinduced optical anisotropy (PIA) in condensed media – nature, properties, applications. 100 anniversary of weigert effect

**V.V. Belyaev[2,3], V.M. Kozenkov[1], D.N. Chausov[2], L.I. Smirnov[1]**
**[1]Kripten, Dubna, Russia**
**[2]Moscow Region State University, Moscow, Russia**
**[3]RUDN University, Moscow, Russia**

In 1919 F. Weigert published a paper [1] on an effect detected by him. In solid solutions of complex molecules of organic dyes induced anisotropy of optical properties appeared under ecitation by polarized light. This paper stimulated investigation of anisotropy of different materials by optical methods. Significant results have been obtained for data on anisotropy of primary processes of light radiation and absorption that relate to specific features of intermolecular interaction in condensed matter. The effect is used in holography, integrated, fiber and polarization optics, in systems for information recording, storage, processing and displaying.
In review to-date PIA investigations and its applications will be presented. The review will include parts as follows:
1. General classification of the effect and mechanism of optical anisotropy formation under impact of irradiation onto condensed matter.
2. Active molecular photoorientation in transparent media: Buckingham effect, non-linear magneto-optical effects (optical analogs of Cotton-Mouton and Faraday effects), non-linear (cooperative) optical effects in partially ordered (LC) media (optical analogs of Freedericks effect)
3. PIA in absorbing media.

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**References**
[1] F. Weigert, Über einen Effekt der Strahlung in lichtempfind lichen Schichten. Verhandl. der Deutschen Phys. Ges., Bd 21, 479 (1919)