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# Azobenzene Molecules Towards the Creation of Molecular Photonics

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Azobenzene molecules present TRANS-CIS isomerization capabilities about the N=N bound, which can be induced with light. The TRANS conformation, naturally the most energetically stable at room temperature, can be converted into CIS conformation under the action of light, with the rate of TRANS-CIS-TRANS conversion for a given molecular system dependent on temperature and light, namely light intensity, wavelength, and light electric filed direction with respect to molecular dipole moment. This process is accompanied by molecular reorientation can be used to optically induce birefringence and to create relief grating in the medium containing azobenzene molecules. The main use of materials is in photonics, namely in optical storage, sensors, energy conversion devices and information processing, reason for which these materials have been widely investigated over the past years. A general overview of these materials features will be drawn, its applications and trends.

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**Presenter:** RIBEIRO, P.A. (Azobenzene molecules present TRANS-CIS isomerization capabilities about the N=N bound, which can be induced with light. The TRANS conformation, naturally the most energetically stable at room temperature, can be converted into CIS conformation under the action of light, with the rate of TRANS-CIS-TRANS conversion for a given molecular system dependent on temperature and light, namely light intensity, wavelength, and light electric filed direction with respect to molecular dipole moment. This process is accompanied by molecular reorientation can be used to optically induce birefringence and to create relief grating in the medium containing azobenzene molecules. The main use of materials is in photonics, namely in optical storage, sensors, energy conversion devices and information processing, reason for which these materials have been widely investigated over the past years. A general overview of these materials features will be drawn, its applications and trends.)

**Session Classification:** Invited talks