

LIGHT-DRIVEN MOLECULAR MOTORS BASED ON AZOBENZENE PHOTOISOMERIZATION

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Rezumat. *Un motor molecular poate fi definit ca un ansamblu de un număr discret de componente moleculare concepute pentru a efectua mișcări mecanice sub controlul factorilor de producție de energie corespunzătoare.*

Abstract. *A molecular motor can be defined as an assembly of a discrete number of molecular components designed to perform mechanical movements under control of appropriate energy inputs.*

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1. Introduction

A molecular motor can be defined as an assembly of a discrete number of molecular components designed to perform mechanical movements under control of appropriate energy inputs. The words *motor* and *machine* are often used interchangeably when referred to molecular systems. Molecular motors and machines operate by means of electronic and/or nuclear rearrangements and make use of thermal fluctuations (*Brownian motion*). They are characterized by the kind of energy input supplied to make them work, the type of motion (*such as translation, rotation, or oscillation*) performed by their components, causing readable changes in some chemical or physical property of the system.

Molecular photochromic switches are an intriguing class of organic molecules which allow the control of molecular structure and function with light.

For references use [³].

Consequently, this offers the possibility of effecting dramatic changes to the bulk properties of a system by irradiation. Photochemical methods are also useful for monitoring the operation of the motor. In general with respect to chemical systems photons can play the dual role of *writing (causing a change in the system)* and *reading (reporting the state of the system)*. As a matter of fact, *cis-trans*

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