

Crystalline structure and photochromic properties of crystals of substituted benz- and isonicotinehydrazides

© Andrey N. Utenyshev,* Sergey M. Aldoshin, Veacheslav A. Smirnov, Konstantin V. Bozhenko,⁺ and Valeriy V. Tkachev

Institute for Problems of Chemical Physics at RAS. Acad. N.N. Semenov Ave., 1. Chernogolovka, 142432.

Moscow reg. Russia. Fax: +7 (096) 576 4009. E-mail: atom@icp.ac.ru

*Supervising author; ⁺Corresponding author

Keywords: photochromic transformations, monocrystals, X-ray-structure analysis, proton transfer, trans, cis-isomerization, benz- and isonicotinehydrazides.

Abstract

X-ray structure analysis of monocrystals of benz- and isonicotinehydrazides has been carried out and their photochromic transformations have been studied. It has been shown that the basic photochemical process in crystals with intermolecular hydrogen bonds (IMHB) is the reversible *trans*-, *cis*-isomerization. Presence of protonodonor groups, forming intermolecular hydrogen bond in molecular structure, results mainly in reversible transfer of proton. Influence of structural characteristics of crystalline packing and INHB on photochemical properties in monocrystals of benz- and isonicotinehydrazides has been revealed.