

# Analysis of Twisted Polymeric Fibers by X-ray Diffraction

Patrik Novák<sup>1, a)</sup>, Dalibor Búč<sup>2</sup>, Justín Murín<sup>3</sup> and Vladimír Goga<sup>3</sup>

<sup>1</sup>*Slovak University of Technology in Bratislava, Institute of Nuclear and Physical Engineering,  
Ilkovičova 3, 812 19 Bratislava, Slovakia*

<sup>2</sup>*Slovak University of Technology in Bratislava, Institute of Electronics and Photonics,  
Ilkovičova 3, 812 19 Bratislava, Slovakia*

<sup>3</sup>*Slovak University of Technology in Bratislava, Institute of Automotive Mechatronics,  
Ilkovičova 3, 812 19 Bratislava, Slovakia*

<sup>a)</sup> Corresponding author: patrik.novak@stuba.sk

**Abstract.** In this work, creation process and structural changes of twisted polymeric fibers was investigated. In order to describe the structural changes, the X-ray diffraction was used on a set of specimens that are fabricated by twisting the straight nylon 6,6 where number of turns was changed gradually. The experimental measurement confirmed phase change dependence on number of turns.