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**USAGE OF THE MICROPIXEL DETECTOR TimePix  
FOR OBSERVATION OF THE DYNAMICS OF PHASE TRANSITIONS IN METALS**

The results for the test of a TimePix hybrid detector as a tool for measuring and imaging in real time dynamics of phase transitions in metal alloys under heating or cooling are presented. The X-rays ( $\sim 10$  keV) experimental setup explored for the diffraction studies at the Institute for Problems of Material Science NASU (Kyiv) is briefly described. An evolution of the diffraction maxima position ( $\sim 20$   $\mu\text{m}$  accuracy) of the scattered X-rays was observed with exposures from a few dozen to a few hundred milliseconds under heating or cooling of the samples of Armco iron at a rate of 100 to 250  $^{\circ}\text{C}/\text{s}$ . Data for the phase transitions (alpha-, gamma-phases observed) during heating/cooling (20 - 1250  $^{\circ}\text{C}$ ) using the X-ray diffraction were measured.

*Keywords:* position sensitive detectors, micro-pixel detector TimePix, fast X-rays structure analysis, phase transition dynamics.