

STRUCTURAL CHANGES IN A FIBROIN FIBER
INDUCED BY AN ALKALINE SOLUTION

*L.A. Bulavin, Yu.F. Zabashka, A.V. Kasprova,
S.P. Senchurov, O.S. Svechnikova*

Taras Shevchenko National University of Kyiv,
Faculty of Physics
(64, Volodymyrs'ka Str., Kyiv 01601, Ukraine)

S u m m a r y

A comparative study of acoustic properties of fibroin fibers treated and untreated in an alkaline solution has been carried out. The dependence of the sound velocity on the static tensile stress in a fiber is determined and is used to calculate the elastic moduli of the second and third orders. A conclusion is made that the treatment of a fibroin fiber in the alkaline solution modifies its structure; in particular, in the course of the treatment, there emerge defects (voids) in unordered areas, and the chains become oriented along the fiber axis in those areas.