Full Paper

Registration Code of Publication: 12-30-5-98 Publication is available for discussion in the framework of the on-line Internet conference "Chemical basis for the rational use of renewable natural resources ". http://butlerov.com/natural_resources/ Contributed: June 20, 2012.

Translational mobility of water and *n*-decane in thermally modified celluloses

© Tatiana V. Smotrina,^{1*+} and Vladimir D. Skirda^{2*}

¹Department of Physics. Volga State Technological University (Mari State Technical University before 18.04.2012). Lenin St., 3. Yoshkar-Ola, 424000. Mari El Republic. Russia. Phone: +7 (8362) 68-68-04. *E-mail: tatyana-smotrina@yandex.ru*

² Department of Molecular SystemsPhysics. Institute of Physics. Kazan (Volga) Federal University. Kremlyovskaya St., 18. Kazan, 420008. Tatarstan. Russia. Phone: +7 (843) 292-75-99. *E-mail: Vladimir.Skirda@ksu.ru*

*Supervising author; ⁺Corresponding author

Keywords: celulose, thermal modification, selfdiffusion, NMR with pulse gradient of magnetic field.

Abstract

Translational mobility of decan and water molecules in thermally modified celluloses was investigated in wide range of diffusion times by NMR with magnetic field pulse gradient. The dependence of effective self diffusion coefficients of decan molecules on diffusion time was determined. The dimensions of spatial limitations in cellulose materials were estimated.