Supplementary Information

First amorphous and crystalline yttrium lactate: synthesis and structural features

A.D. Yapryntsev[1], A.E. Baranchikov[1], A.V. Churakov[1], G.P. Kopitsa[2,3], A.A. Silvestrova[1,4], M.V. Golikova[1,5], O.S. Ivanova[1], Yu.E. Gorshkova[6,7], V.K. Ivanov[1,4]*

[1] *Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences, Moscow, Russia*

[2] *Petersburg Nuclear Physics Institute of National Research Centre "Kurchatov Institute", St. Petersburg, Russia*

[3] *Grebenshchikov Institute of Silicate Chemistry of the Russian Academy of Sciences, St. Petersburg, Russia*

[4] *National Research University Higher School of Economics, Moscow, Russia*

[5] *Mendeleev University of Chemical Technology, Moscow, Russia*

[6] *Frank Laboratory of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia*

[7] *Institute of Physics, Kazan Federal University, Kazan, Russia*

* Corresponding author: van@igic.ras.ru

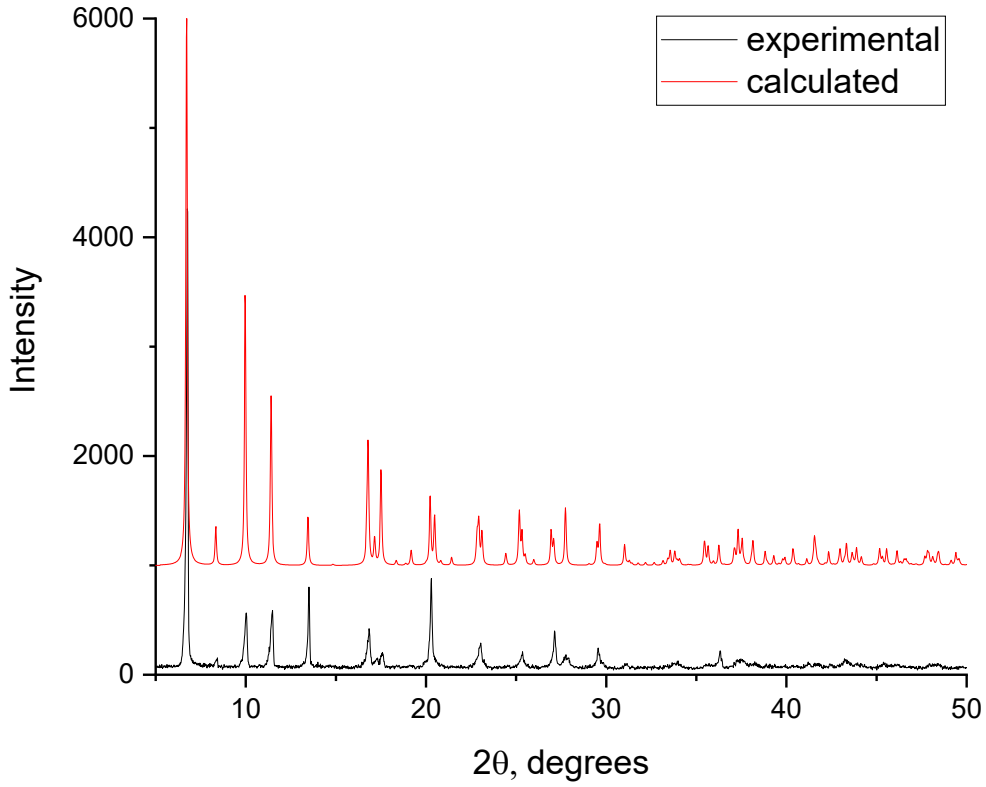

Fig. S1. Comparison of the powder diffraction pattern of compound **1** and theoretical diffraction pattern calculated from single crystal data.

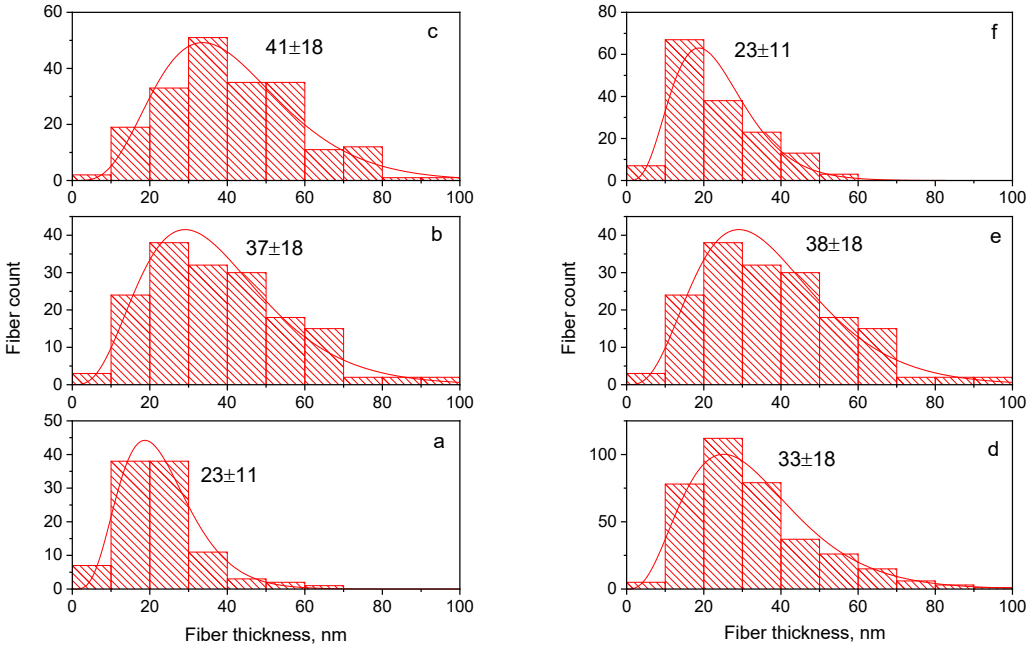

Fig. S2. Particle width distributions calculated from SEM data for the fibres of basic yttrium lactate formed upon hydrothermal treatment of solutions containing yttrium chloride ($1.7 \cdot 10^{-2}$ M), L-lactic acid (a – $2.4 \cdot 10^{-2}$ M, b – $5.6 \cdot 10^{-2}$ M, c – $12 \cdot 10^{-2}$ M; HMT concentration was $4.7 \cdot 10^{-2}$ M) and HMT (d – $2.5 \cdot 10^{-2}$ M, e – $4.7 \cdot 10^{-2}$ M, f – $6.6 \cdot 10^{-2}$ M; HLac concentration was $5.6 \cdot 10^{-2}$ M).

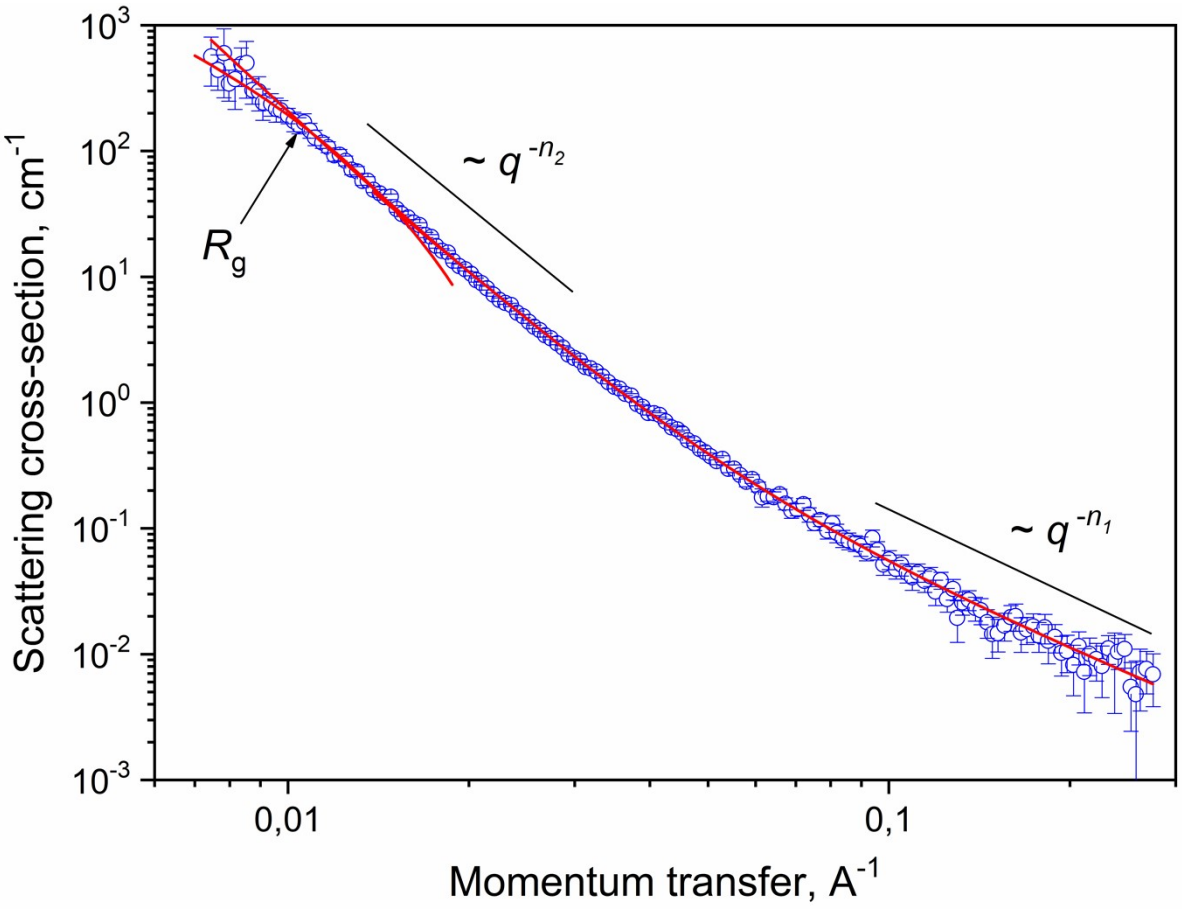

Fig. S3. Differential cross-section $d\Sigma(q)/d\Omega$ of the neutron scattering for yttrium basic lactate paper-like sample. Fitting the experimental data to equation (2) is given as a solid line.