THERMODYNAMIC CHARACTERISTICS OF AN AQUEOUS OLEIC ACID EMULSION

Aetov A. U.,* Zaripov Z. I., Usmanov R. A., Nakipov R. R.

"KNITU", Kazan, Russia

**aetovalmaz@mail.ru*

The oxidation technology realized in the supercritical water environment (SCWO) is one of the environmentally friendly ways of processing industrial and household waste [1-2]. Studies of chemical reactions in the GFR media have received considerable attention [3-5]. Within the framework of this direction, experimental studies have been performed and the results of some thermodynamic properties of aqueous solutions of fatty (oleic) acid included in the sewage waters of the food industry: the coefficient of thermal expansion and density in the temperature range 298-363K and pressures of 0.098-49.0 MPa, isobaric heat capacity at temperatures of 320K-570K and pressures of 9.8-29.4 MPa without and in the presence of hydrogen peroxide. In the presence of hydrogen peroxide, a negative thermal effect is established, the magnitude of which increases with increasing pressure from 70 kJ / kg to 100 kJ / kg.

1. Marrone Ph. A., Hong G. T., Spritzer M.N. J. Adv. Oxid. Technol. 2007. Vol. 10. No. 1. 157-168p.

2. Anikeev VI I. Ermakova A.A. Jour. prikl. chemistry. 2011. T. 84. 88-94.

3. Gumerov F.M., Kayumov R.A., Usmanov R.A., Sagdeev A.A., Abdullin I.Sh., Sharafeev R. F. .. American J. Anal. Chem. 2012, Vol. 3. 950-957p.

4. Vostrikov AA, Dubov D.Yu., Psarov SA. Proceedings of the Academy of Sciences (Ser, Chem.). 2001. P. 1409-1412.

5. Gayazova E. S., Usmanov R. A., Gumerov F. M., Friedland S. V., Zaripov Z. I., Gabitov F. R., Musin R. Z. International Journal of Analytical Mass Spectrometry and Chromatography. 2013. 48-54p.