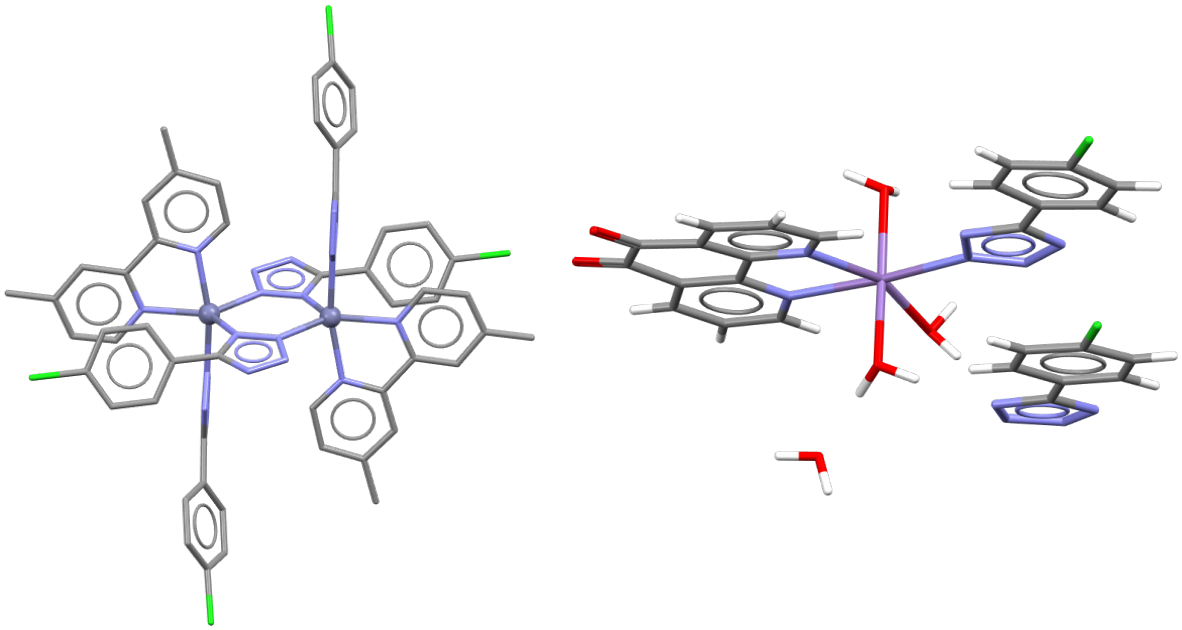

Fig. 1. *The structure of $[Zn_2(dmbipy)_2L_4]$ (on the left) and $[Mn(phendione)(H_2O)_3L]L \cdot H_2O$ (on the right)*

and chloroquine). All complexes do not exhibit fungistatic activity against *P. italicum* (except for $[Mn(phen)(H_2O)_3L]L \cdot 2H_2O$) and bacteriostatic activity against gram-positive bacteria St. aureus. At the same time, all the presented complexes (except for $[Mn(bipy)(H_2O)_3L]L$) showed high protistocidal activity against *C. steinii*. In particular, the activity of the $[Zn_2(dmbipy)_2L_4]$ and $[Mn(phen)(H_2O)_3L]L \cdot 2H_2O$ complexes is comparable to the activity of the medical drug toltrazuril.

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EVALUATION OF THE POSSIBILITY TO OBTAIN ARCTIC DIESEL BY ADDING A DEPRESSANT ADDITIVE AND MODIFYING THE COMPOSITION OF THE FUEL

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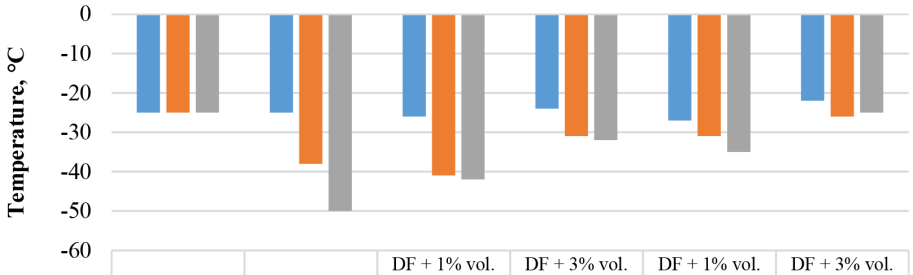
Arctic diesel fuel (DF) is in high demand in the Russian Federation. This type of fuel can be produced by different methods, but the most relevant of which are dewaxing and addition of depressor additives into DF. Depressor additives were the object of research in this work, due to their availability for mass consumption, as well as ease of operation and transportation. It is worth considering that the use of additives, unlike dewaxing, does not require a large amount of equipment, which also facilitates the production of diesel fuel of the Arctic grade.

Changes in fuel composition can influence on the result of additive action, both increasing its effectiveness and decreasing it. General trends from such modifications can be only identified experimentally.

The aim of the work is to evaluate the possibility of obtaining Arctic diesel by adding a depressant additive and modifying the fuel composition.

During the work blends of diesel fuel with an additive, as well as blends of diesel fuel with addition of hexadecane (HXD) and heptadecane (HPD) in concentrations of 1 and 3 % of the volume of die-



	DF	DF + additive	DF + 1% vol. HXD + additive	DF + 3% vol. HXD + additive	DF + 1% vol. HPD + additive	DF + 3% vol. HPD + additive
CP, °C	-25	-25	-26	-24	-27	-22
CFPP, °C	-25	-38	-41	-31	-31	-26
PP, °C	-25	-50	-42	-32	-35	-25

Fig. 1. *Results of determining the low-temperature characteristics*

sel fuel and adding an additive were prepared. HXD and HPD are individual n-paraffin hydrocarbons with carbon content of 16 and 17 atoms, respectively. Further, according to the methods presented in [1–3], the cold filter plugging point (CFPP), as well as cloud point (CP) and pour point (PP) of a DF sample and obtained blends were determined. The results are shown on the Figure.

Based on data from the Figure, it can be seen that, according to [4], the studied sample of DF meets to the winter grade of fuel by values of CFPP. After adding the additive, the CFPP value decreased by 13 °C, but the grade of the sample remained unchanged.

With further addition of n-paraffin hydrocarbons we can see a decrease in CFPP values of the blends of DF + 1 % vol. HXD + additive by 3 °C relative to the blends of fuel with additive, but the obtained values also do not meet to the necessary for the arctic grade fuel. Addition of 3 % vol. of HXD and 1, 3 % vol. of HPD does not bring the desired result.

Adding an additive to the fuel and further adding hydrocarbons has almost no effect on the CP and has a negative effect on the fuel PP.

Thus, we can conclude that by modifying the fuel composition, namely by introducing small concentrations of n-paraffins, we can achieve a decrease in CFPP values and a more pronounced effect of the depressor additive.

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