this case there is a problem of separating mortar and precipitant.

There is a method of polymer emulsionizing by rotor-stator homogenizer (concentration about 20%) with aqueous alcohols, glycols, glycol ethers, ketones [1]. This method allows decreasing the mechanical distinction of polymer and using water as the dispersive material. Taking into account this experiment we tried to find the cheapest homogenization methods and the most available emulsifiers, as well as we tried to find possibility to separate by heat and vacuum distillation. As a result, aqueous suspension and dry powder are obtained. Water, viscosity increasing agent, water soluble surfactant, calcium stearate were used. The last is applied in order to stabilize the aqueous suspension as dry filler to prevent particles caking. As a consequence, samples of suspension with a concentration of up to 20% polymer were obtained. In the dry powder polymer concentration was brought to 60%. The powder form is the most promising in terms of storage, transportation and use, it is composed of 0.4–1 mm size of the polymer particles (60%), calcium stearate (30%), water-soluble surfactant (10%). In the experiment a mixture of anionic and nonionic surfactants was used as water-soluble surfactant.

In conclusion, we want to say that researching Toms effect has huge potential, because mechanism of this effect has not yet discovered. And it can be used not only in oil transportation, but in many different areas of human activities, like shipbuilding, car industry, missilery etc. Thus we can extend using of these additives.

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Potassium 4-Iodylbenzenesulfonate (PIBS) as a convenient water-soluble reagent based on hypervalent iodine

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Intensive study of hypervalent iodine derivatives has led to the creation of many reagents based on it, which have different properties, and each of them has its advantages and disadvantages and, therefore, they attract close

attention [1-3]. Most of them is eco-friendly and versatile reagents for various synthetically important oxidative transformations [4]. Polyvalent iodine (V) compounds are particularly useful, they are selective oxidants commonly used in the synthesis of natural products [1–4]. However, some of them have significant drawbacks. The simplest one is iodylbenzene, which was used by Turkish scientists in ozonolysis reactions [5]. The oxidized form of iodine is reduced to a monovalent state, which leads to the formation of iodobenzene. It is difficult to remove idobenezene from the reaction mixture due to high solubility in the most organic solvents.

2-Iodoxybenzoic acid (IBX) and its derivatives (e.g., Dess-Martin periodinane – DMP), in addition, have potentially explosive properties [1, 2]. Reagent of Dess-Martin is less stable and more expensive than IBX.

Ishihara and coworkers researched thia analog of IBX (2-iodoxybenzenesulfonic acid – IBS) [6]. IBS can be used as an extremely active catalyst for selective oxidation of alcohols using Oxone as stoichiometric oxidant. However, 2-iodoxybenzenesulfonic acid is extremely difficult to obtain and its tautomeric V-valent form of iodine is unstable.

We proposed an alternative variant of a stable strong oxidant, which has been obtained by oxidation of 4-iodobenzenesulfonic acid using Oxone in water. Furthermore, the active agent can be recovered from the reaction mixture efficientl , which corresponds to the principles of Green chemistry. [7]

A new hypervalent iodine (V) compound, potassium 4-iodylbenzenesulfonate, was prepared by the oxidation of 4-iodobenzensulfonic acid with Oxone in water. This potassium salt can be used in electrophilic addition to unsaturated compounds as well.

The iodomethoxylation reaction was carried out in methanol during 0.5 h in presence of iodine at room temperature. The general schemes of the preparation of aliphatic iododerivatives using PIBS are represented below (Fig. 1).

In conclusion, the reactivity of PIBS in electrophilic addition to un-

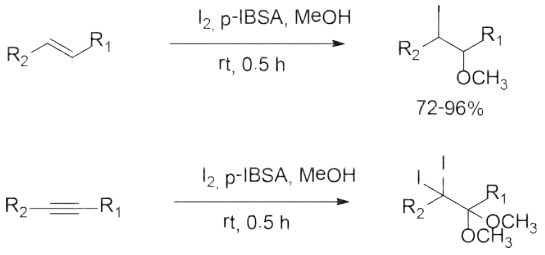

Fig. 1. *General schemes of iodomethoxylation of alkenes and alkynes*

saturated compounds was investigated. Aliphatic and aromatic alkenes and alkynes were used as substrates. As a result, products of iodomethoxylation with good yields were obtained. This pathway of creation of aliphatic iododerivatives is enough simple, moreover, it does not require further purification by column chromatography.

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Research mechanical and tribotechnical properties of composites “uhmwpe-ptfe”

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In order to develop solid self-lubricating composites based on ultrahigh molecular weight polyethylene (UHMWPE) matrix, we studied mechanical and tribotechnical characteristics of the blends “UHMWPE+Polytetraflu - roethylene” under dry friction. Recently micro- and nanocomposites on the basis of (ultra) high molecular weight matrix (for example, UHMWPE) are widely developed and studied [1–3]. It is known that polytetrafl oroethylene (PTFE) is antifrictional polymer with lowest friction coefficient among structural polymeric materials.

The UHMWPE powder (GUR-2122 by Ticona) with the molecular