Table 1. Value of acid (AN) and bromine (BN) numbers of PR_{C9}

PR characteristic	Thermal polymerization		Initiated polymerization		Ionic polymerization	
	AN, mg KOH/g	BN, mg Br_2/g	AN, mg KOH/g	BN, mg Br_2/g	AN, mg KOH/g	BN, mg Br_2/g
PR_{C9}	1.8	42.8	3.9	45.9	2.0	43.0
$N–PR_{C9}$	22.1	2.2	14.1	3.6	15.4	13.6
$NS–PR_{C9}$	–	1.9	–	2.1	–	7.6

uct – NS-PR). The nitrating agent was added in an amount of 30 % by weight of the resin. The solvent and unreacted products were extracted from the reaction mixture under decreased pressure.

The process was controlled by IR spectroscopy. The appearance of new bands with vibration frequency at 1550–1600 cm^{-1} region indicates the addition of NO_2-groups in the resin composition.

The process of resin oxidation proceeds simultaneously with nitration, which confirms the increase of signals with absorption band at the areas of 1030–1050 and 1130–1160 cm^{-1}.

Acid and bromine numbers of the obtained resins were determined by standard titrimetric methods [6]. The results are shown in Table 1.

As a result of the research, sample of PRC_9ion and nitrated petroleum resins were obtained. The appearance of peaks with banding vibration at 1550–1600 cm^{-1} region and the increasing of values of bromine and acid numbers confirm functionalization at double bonds.

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NEW METHOD OF DIARYLIODONIUM SALTS SYNTHESIS BY OXIDIZING REAGENT OXONE

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Polyvalent iodine reagents found wide application in organic synthesis as environmentally friendly oxidizing reagents, mainly because of its low toxicity, availability, stability on air and humidity resistance. At the same time these substances are an excellent alternative to such heavy metals as lead (IV), tallium (III) and copper (II) [1].

One of the most well characterized polyvalent iodine substances are diaryliodonium salts which have found application as synthetic reagents and biologically active agents.

Simple "one – pot" synthesis of diaryliodonium salts includes treatment of aryl iodide with commercially available oxidizing reagent in the presence of the substitute arene and the corresponding acid or salt which counter – anion finishes the preparation of target product [2].

For carrying out of above-mentioned process can be used mild, inexpensive, easy to use and environmentally friendly oxidizing reagent which main active component is potassium monopersulphate as the constituting threefold salt with a formula $2KHSO_5 \times KHSO_4 \times K_2SO_4$ (also known as Oxone) [3]. As sources of counter – anions have also been used such inexpensive reagents as KBr and TsOH.

The reaction pathway is shown in the figure 1.

Owing to the good leaving ability of bromide and tosylate groups this diaryliodonium salts are

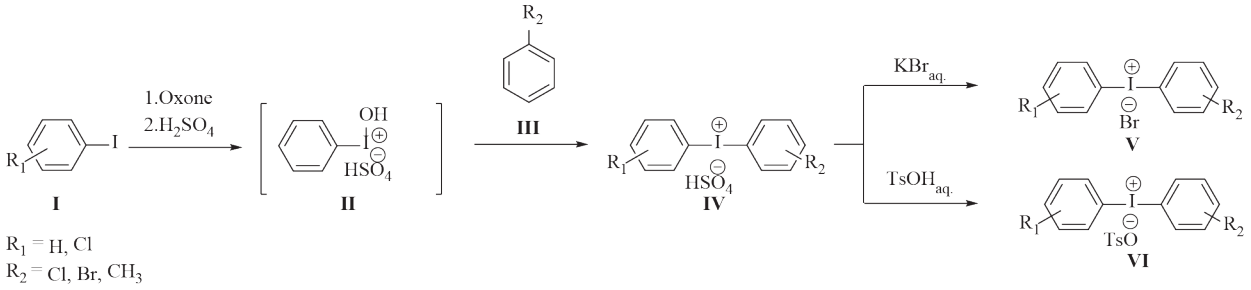
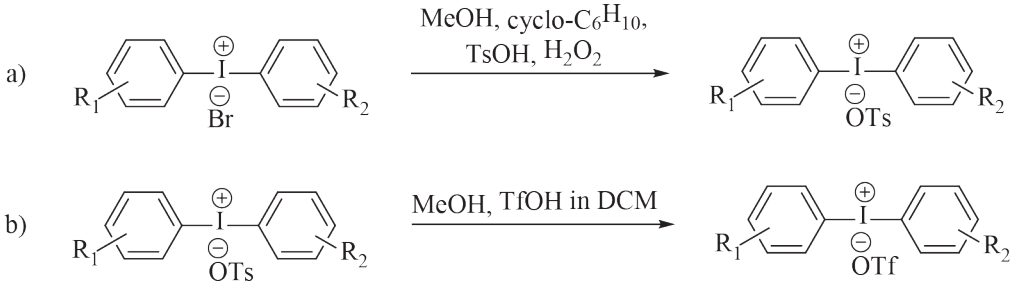


Fig. 1. *Scheme of diaryliodonium salts synthesis*



Scheme 1.

convenient precursors for preparing of diaryliodonium salts with other counter – ions via oxidative anion metatheses. Thus, we succeeded to obtain diaryliodonium tosylates from the corresponding bromide (a) and diaryliodonium triflate from tosylate (b):

The prepared products can find application as initiators for some polymerization processes and also as tracers for positron – emission tomography (PET).

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EFFICIENCY EVALUATION OF CATALYTIC REFOTMING IN THE STUDY OF FEEDSTOCK COMPOSITION WITH THE USE OF MATHEMATICAL MODEL

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In this work, the catalytic reforming unit monitoring of one of the refineries in Russia using mathematical modeling was performed . For assessing the quality of feedstock, the feedstock index (1) criterion was defined. After the feedstock composition analysis with a mathematical model, it was revealed that the feedstock index does not allow to assess the influence of the feedstock composition on the reformer operation adequately. Moreover, it cannot give a fairly complete picture of processes taking place in the reactor, as far as it's calculated only on the basis of total naphthenic and aromatic hydrocarbons content in the feedstock:

$$\text{Feedstock index} = A + 0.85N, \quad (1)$$

where A and N are the content of aromatic and naphthenic hydrocarbons in hydroprocessed feedstock respectively, % wt.

However, it is known, that the straight-run gasoline fraction, which is the feedstock for the reforming process, is a continuous multicomponent mixture that contains in addition to naphthenic and