

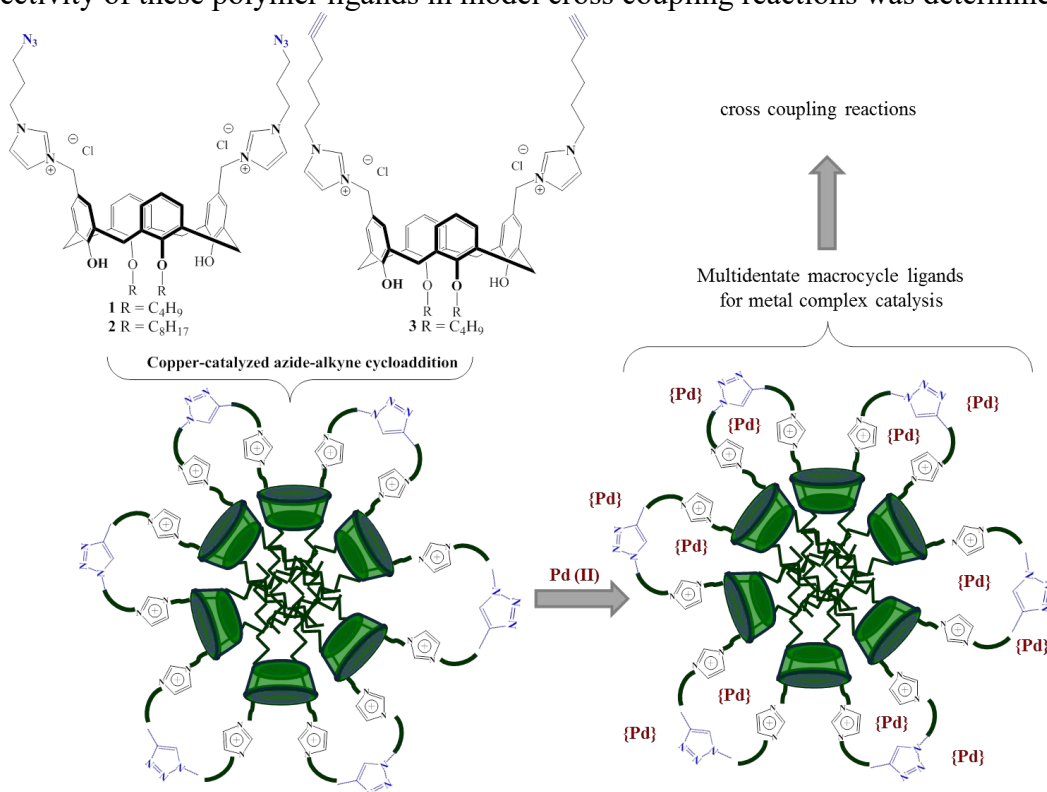
# NANOPARTICLES ON POLYTRIAZOLE-IMIDAZOLE CALIXARENE SUPPORT: SYNTHESIS AND CATALYSIS IN AQUEOUS SOLUTIONS

Mironova D.A.<sup>1</sup>, Garipova R.I.<sup>1</sup>, Volodina A.A.<sup>1</sup>, Sultanova E.D.<sup>1</sup>, Burilov V.A.<sup>1</sup>, Solovieva S.E.<sup>1,2</sup>, Antipin I.S.<sup>1,2</sup>

<sup>1</sup>Kazan (Volga region) Federal University, Russia  
420008, Russia, Kazan, 18 Kremlyovskaya str

<sup>2</sup>Arbuzov Institute of Organic and Physical Chemistry,  
FRC Kazan Scientific Center of RAS, Russia  
420088, Russia, Kazan, 8 Arbuzov str  
DAMironova@kpfu.ru

Amphiphilic derivatives of calixarenes were used as multifunctional initiators to prepare branched polymers with a calixarene core. It was carried out a comprehensive study including the synthesis, the study of the self-association processes of the synthesized macrocycles in water (critical micelle concentration, average hydrodynamic radius of particles, microscopy). The use of macrocycles with amphiphilic nature allowed to form the “core” of the particle by self-organization in aqueous solutions. The presence of azide groups in the macrocycle allowed subsequent covalent crosslinking of the “core” by copper-catalyzed azide-alkyne cycloaddition (CuAAC) to give mixed copolymers containing imidazolium and macrocyclic fragments. The obtained polymer particles were applied as multidentate NHC ligands for Pd (II). Catalytic activity and selectivity of these polymer ligands in model cross coupling reactions was determined.



Scheme 1.

This study was supported by the Russian Science Foundation (Grant No. 19-13-00095).