CONFERENCE ABSTRACTS

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Polynuclear Metal Complexes Formed by Coupling of Azaheterocyclic Thiones with Coordinated Aryl Isocyanides

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In recent decades, transition metal complexes with aminocarbene ligands (NHC – N-heterocyclic carbenes, ADC – acyclic diaminocarbenes) took a special place in coordination and organometallic chemistry due to their wide application in various application areas such as catalysis, material design, and medical chemistry. One of the promising and easy in processing methods for generating of complexes with various types of aminocarbene ligands is metal-mediated addition of nucleophiles to coordinated isocyanides [1].

In this work, we have studied the Pd^{II} and Pt^{II}-mediated coupling of aryl isocyanides with azaheterocyclic thiones acting as ambident *S*,*N*-nucleophiles. The reaction of *bis*(arylisocyanide) complexes with thiones in the presence of one equivalent of base leads to the formation of mononuclear *C*,*S*-chelated aminocarbene complexes in which the carbene fragment is formed by the endocyclic nitrogen atom of the thione what is the first example of such interaction [2]. In the presence of excess base in the reaction with unsubstituted thiones yields the deprotonation of the formed complexes and allows obtaining polynuclear coordination macrocyclic compounds. These compounds can be converted to mononuclear species by the addition of triphenylphosphine.

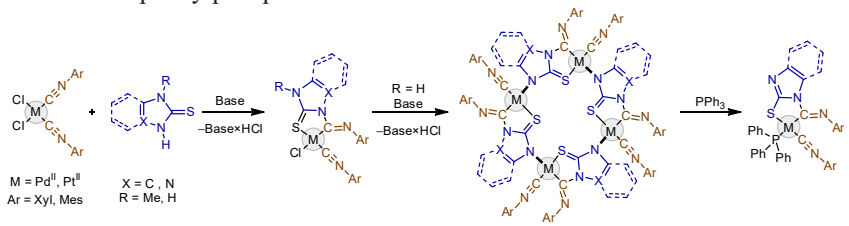

Fig. 1. Coupling of coordinated arylisocyanides with azaheterocyclic thiones.

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References

1. V.P. Boyarskiy, N.A. Bokach, K.V. Luzyanin, V.Yu. Kukushkin // Chem. Rev., № 115, p. 2698–2779 (2015).
2. R.A. Popov, A.S. Mikherdov, A.S. Novikov, L.V. Myznikov, V.P. Boyarskiy // New J. Chem., № 45, p. 1785–1789 (2021).

CERTIFICATE

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Science&Progress 2021
Section A

14:45-16:15, moderator Prof. D. Kirsanov

14:45 - 14:54	Mukhin Kirill	Electrochemical Stability of Aqueous System Containing Lithium and Cesium Acetates
14:54 - 15:03	Ostrokhishko Anastasiya	Influence of the microelements on anticancer metabolites biosynthesis in basidiomycetes
15:03 - 15:12	Paderina Aleksandra	Pyridyl-functionalized Phosphinine As a Ligand for Novel Cu(I) Complexes
15:12 - 15:21	Pershina Liubov	Polyelectrolyte multilayers for robust carbon fiber-based potentiometric ion sensing and correlation between elemental constituent in blood and urine
15:21 - 15:30	Shevchuk Alisa	Plasmon Nanoparticles Dimers Obtained by Molecular Crosslinking with Diaminotolane
15:30 - 15:39	Pikalova Tatyana	New Thermo- and Potentioresistive Organometallic Polymers
15:39 - 15:48	Popov Roman	Polynuclear Metal Complexes Formed by Coupling of Azahetero-cyclic Thiones with Coordinated Aryl Isocyanides
15:48 - 15:57	Rostovtseva Valeriia	Perovskite-like Oxide Doped into Polyetherimide Mixed Matrix Membranes for Liquid and Gas Separation
15:57 - 16:06	Serykh Tatyana	Creation of synthetic hydroxyapatite in the presence of optically active substances
16:06 - 16:15		Might be changed soon

16:30-18:00, moderator Prof. E. Grachova

16:30 - 16:39	Potapenkov Vasilii	Synthesis of polythiophene doped sulfonated polycatechol
16:39 - 16:48	Zyryanova Polina	Studying the cell-cell communication via ion channels
16:48 - 16:57	Zharskaia Nina	Photophysical Properties of C^N*N^C-cyclometalated Platinum(II) Complexes
16:57 - 17:06	Verkhov Valeriy	Theoretical and Experimental Investigation of the Peculiarities of the Interaction of Pyridines with Organolithium Reagents
17:06 - 17:15	Strelnikov Aleksei	Silver and Gold Nanoparticles Modified with Cyclene and Tetraxetane Chelators: Preparation and Optical Properties
17:15 - 17:24	Titov Gleb	Reactions of diazo compounds with 2H-azirine-2-carboxylic acids under metal catalysis and photolysis
17:24 - 17:33	Yuskina Ekaterina	Multipurpose detector based on high frequency inductor
17:33 - 17:42	Volkov Alexey	Synthesis and Electrochemical Properties of Conducting Polymer-Coated Molybdenum Disulfide
17:42 - 17:51	Strizhneva Varvara	Electroanalytical detection of zinc in running water
17:51 - 18:00	Sabbouh Mirna	Sonochemical nanostructuring of Cu-Zn alloy