



THE INTERNATIONAL CONFERENCE
«CHEMISTRY OF ORGANOELEMENT
COMPOUNDS AND POLYMERS – 2024»

BOOK OF ABSTRACTS

18–22 NOVEMBER 2024, MOSCOW





**The international conference
«Chemistry of Organoelement Compounds
and Polymers – 2024»**

BOOK OF ABSTRACTS

*The conference is dedicated
to the 70th anniversary of INEOS RAS
and the 125th birth anniversary of its founder
academician Alexander N. Nesmeyanov*

18-22 november 2024
Moscow

ORGANIZERS

- Division of Chemistry and Materials Sciences of RAS
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Proceedings of The international conference “Chemistry of Organoelement Compounds and Polymers –2024”, held from November 18 to 22, 2024. The conference will cover both fundamental and applied aspects of organoelement and polymer chemistry. The conference program will include invited lectures, oral and poster presentations. The topics will include:

- Organoelement and coordination chemistry
- Homogeneous and heterogeneous catalysis
- New trends in polymer synthesis
- Organoelement polymers
- Physical chemistry of polymer systems
- Organoelement and macromolecular compounds for biomedical applications
- Supramolecular chemistry and MOFs
- Organoelement and macromolecular compounds for material chemistry

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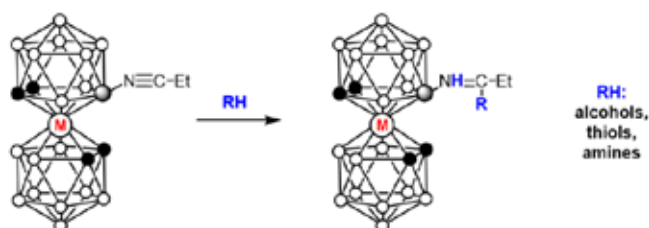
INTRAMOLECULAR CYCLIZATION IN [8-ETC(OH)=HN-3,3'-CO(1,2-C₂B₉H₁₀)(1',2'-C₂B₉H₁₁)]

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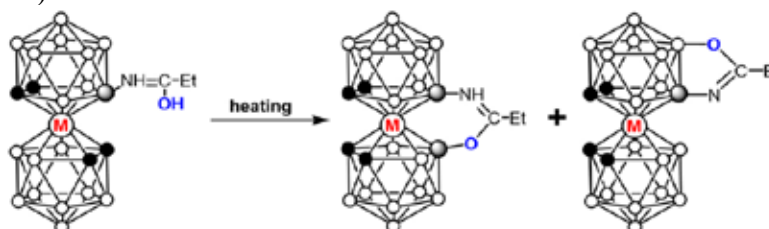
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The possibility of modifying bis(dicarbollide) complexes of cobalt and iron by nucleophilic addition reactions at the triple bond B-N⁺≡C-R was demonstrated previously.^{1,2}



Scheme 1. Nucleophilic addition to propionitrilium derivatives

In this work we studied the possibility of intramolecular cyclization on the example of 8-substituted iminol obtained by hydrolysis of the propionitrile derivative of cobalt bis(dicarbollide). It was shown that, depending on the temperature, heating this derivative results in different cyclization products including 6-membered oxazine-like cycle combining two dicarbollide ligands and 5-membered oxazole-like cycle in one dicarbollide ligand (scheme 1, figure 1a).



Scheme 2. Heating iminol [8-EtC(OH)=HN-3,3'-Co(1,2-C₂B₉H₁₀)(1',2'-C₂B₉H₁₁)]

Heating at higher temperature leads to the elimination of H₂O and produces the 5-membered cycle derivative with B-C-N-B bridge (figure 1b).

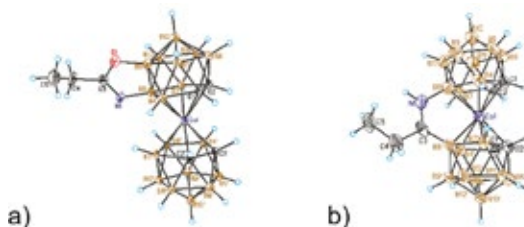


Figure 1. General view of cyclic metallacarboranes

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2. E.V. Bogdanova, M.Yu. Stogniy, et al., *Molecules.* **2021**,26(21), 6544.

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