INEOS RAS

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

BOOK OF ABSTRACTS

18–22 NOVEMBER 2024, MOSCOW

INEOS RAS

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

BOOK OF ABSTRACTS

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

18-22 november 2024
Moscow

УДК 543

ORGANIZERS

- **Division of Chemistry and Materials Sciences of RAS**
- **Scientific Council of RAS on Organic Chemistry**
- **A.N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences**
- **Department of Chemistry, Moscow State University**

GENERAL SPONSOR

EXHIBITORS

SUPPORTED BY

The international conference «Chemistry of Organoelement Compounds and Polymers – 2024»: book of abstracts (18-22 november 2024, Moscow) [electronic version] – Moscow, 2024. – 272 p.

ISBN 978-5-6052004-6-8

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

These materials are based on the information provided by the participants and approved by the organizing committee. Theses materials are published in the author’s version. The organizers are not responsible for inaccuracies and omissions in the names and addresses presented in this collection.

ISBN 978-5-6052004-6-8

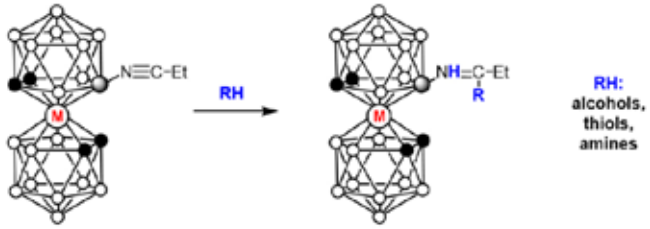
CONTENT

INTRAMOLECULAR CYCLIZATION IN [8-ETC(OH)=HN-3,3`-CO(1,2-$C_2B_9H_{10}$)(1`,2`-$C_2B_9H_{11}$)]

Bogdanova E.V.,[a] Stogniy M.,[a,b] Anufriev S.,[a] Sivaev I.,[a] Bregadze V.[a]

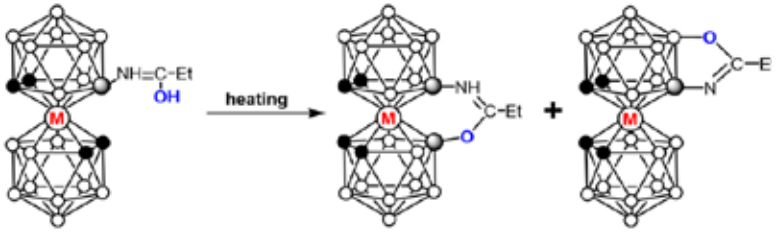
[a] A.N. Nesmeyanov Institute of Organoelement Compounds of the Russian Academy of Sciences, 28 Vavilov str., Moscow, Russia,
e-mail: bogdanovakatte@mail.ru
[b] MIREA — Russian technological university, 78 Vernadsky avenue, Moscow, Russia

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-$C_2B_9H_{10}$)(1`,2`-$C_2B_9H_{11}$)]

Heating at higher temperature leads to the elimination of H_2O and produces the 5-membered cycle derivative with B-C-N-B bridge (figure 1b).

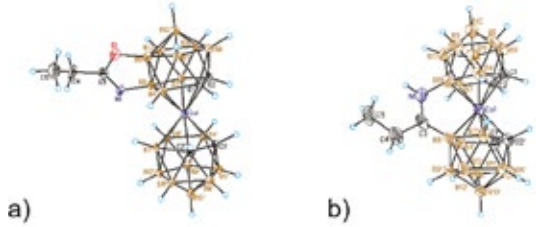


Figure 1. General view of cyclic metallacarboranes

References
1. E.V. Bogdanova, M.Yu. Stogniy, et al., *New J. Chem.* **2020**,*44*, 15836.
2. E.V. Bogdanova, M.Yu. Stogniy, et al., *Molecules*. **2021**,*26*(21), 6544.