



Inorganic Chemistry Division NEWSLETTER Spring 2024

Newsletter Editor: Dan Rabinovich

Message from the President – Lidia Armelao

Dear Colleagues,

The 49th IUPAC General Assembly and the 52nd World Chemistry Conference held in The Hague a few months ago were long-awaited events to meet in person after the pandemic. I am very grateful to all members, national representatives, and young observers who attended the Division II meeting and contributed to productive and open discussions. On behalf of the entire Division, I would like to warmly congratulate Jan Reedijk (The Netherlands) and Lars Öhrström (Sweden) for their recognition as the first Emeritus Fellows of Division II for their exemplary commitment and outstanding contributions to IUPAC and to the advancement of chemical sciences in general. I welcome Robin Macaluso and Jorge Colón as new Division Vice-President and Secretary, respectively, for the 2024–2025 biennium, as well as the new elected members and national representatives. We are already in the early stages of planning for a (virtual) Division II off-year meeting to take place in late May or June this year, which everyone will hopefully be able to attend. I encourage all to participate actively in IUPAC and develop collaborative projects, perhaps even jointly with different divisions and committees to improve and extend networking opportunities. You will find in this newsletter a description of some divisional endeavors such as the special issue of PAC dedicated to Dr. Mary Good, announcements of future conferences of potential interest to our members, and an invitation to participate in the 2024 edition of the IUPAC Global Women's Breakfast, a worldwide initiative to promote gender equity in science. Finally, my gratitude to Daniel Rabinovich for his divisional service as Secretary during the past four years and his willingness to continue serving now the Division as Coordinator of Projects. I thank all members of the Division for their valuable contributions and wish everyone a productive and pleasant year ahead.

Jan Reedijk and Lars Öhrström named Emeritus Fellows of Division II

The Divisions of IUPAC may award Emeritus Fellow status to any former members who have made outstanding contributions to IUPAC and to the chemical sciences in general. Even though the program was initiated in 2010, two members of our Division have for the first time in 2023 been named Emeritus Fellows. Congratulations to Jan and Lars for the well-deserved honor!



Jan Reedijk

A prolific researcher in coordination and bioinorganic chemistry who retired from the University of Leiden in the Netherlands in 2009 and has more than 1200 peer-reviewed publications, Jan Reedijk has been involved with IUPAC since 1977. He has served as President of two Divisions, namely Division VIII (2009–2011) and Division II (2014–2018), and he has been a member of the Bureau (2014–2018), Chair of the Project Committee (2020–2023), and a member of the Editorial Board of Pure and Applied Chemistry (2010–2021). He was a member of the Dutch delegation to IUPAC for 38 years (1985–2023) and he co-chaired the Management Committee for the worldwide celebrations of the International Year of the Periodic Table in 2019.



Lars Öhrström

A professor of inorganic chemistry at Chalmers University of Technology in Gothenburg, Sweden, since 1995, and head of the undergraduate program in chemical engineering for more than a decade (2013–2023), Lars Öhrström has published extensively in the areas of organometallic and coordination chemistry, particularly Metal-Organic Frameworks (MOFs). He has acted as organizer of several international symposia and workshops, several of these in Africa, and he is a prolific popular science writer, with his most popular book, *The Last Alchemist in Paris*, having been translated into five languages. He joined Division II in 2008, he has been a member of multiple projects, he served as Division II President and member of the Bureau for four years (2018–2021).

Report from the Division's Meeting

The Hague, Netherlands, 19-20 August 2023

Agenda – August 19th

1. Welcome and introduction (L. Armelao, L. Öhrström)
2. Approval of the Agenda and announcements; appointment of a volunteer to record a list of “Action Items” (L. Armelao)
3. Status of action items from the off-year virtual meeting in 2022 (P. Karen)
4. Information Package for new Division members (L. Öhrström)
5. Outcome of the Division elections for the 2024-2025 biennium; current and future list of Division Members and their duties (D. Rabinovich); new Nominating Committee (L. Armelao)
6. Reports from affiliated Organizations by Division II representatives and presentation of new IUPAC bodies:
 - (a) Committee on Ethics, Diversity, Equity and Inclusion (M. Garson)
 - (b) Interdivisional Committee on Terminology, Nomenclature, and Symbols, including proposed ways forward in updating the Gold Book (M. Drábik, P. Karen)
7. Report from Commission on Isotopic Abundances and Atomic Weights (CIAAW): review of CIAAW subcommittees (Johanna Irrgeher) and reports of relevant CIAAW projects (J. Irrgeher, J. Mejia)
8. PAC special issue dedicated to Dr. Mary L. Good (L. Armelao, M. Hasegawa, L. Öhrström, D. Rabinovich)
9. Division Newsletter: status and planning (L. Armelao, D. Rabinovich); website manager (J. Mejia)
10. Review of Division budget allocations and expenditures (L. Armelao, L. Öhrström)
11. Reports of IUPAC Bureau actions (L. Armelao, L. Öhrström): Bureau splits into Executive Board and Science Board.
12. Visit to Division II by the President and the Secretary General of IUPAC
13. Reports on recent, planned and proposed Division-sponsored conferences. Ask in advance for IUPAC endorsement.
14. Translation of Periodic Table Challenge into other languages (Project 2017-031-1-050)
15. Review of project status and comments from monitors (D. Rabinovich on behalf of R. Macaluso)
16. Review of any new project proposals (D. Rabinovich on behalf of R. Macaluso) and discussion on generation of future projects (L. Armelao)
17. Reports from Division II projects:
 - (a) Toward a comprehensive definition of valence, Project 2018-030-2-200 (P. Karen)
 - (b) Gold Book Update of Terms for Inorganic Chemistry, Project 2020-022-1-200 (M. Drábik)
18. Questions?

Agenda – August 20th

19. Status of the next Division off-year meeting: Need, possible location? (Lidia)
20. Status of Division rules and operational rules (L. Armelao). Emeritus members?
21. Reports from affiliated Organizations by Division II representatives:
 - (a) Committee on Chemistry Education (CCE) (Y. Farina, Jan Apotheker). Chemistry Teacher International. New ideas for teaching Inorganic Chemistry. How to use the new definition of the mol in teaching chemistry.
 - (b) An hour with division VIII (R. Hartshorn): Revision of the Red Book. Inorganic polymers, coordination polymers. Div. II should help with names of groups of atoms such as pnictogens, how to name isomers due to isotopes (isotopolags, not isotopomers?)
22. Interdivisional meetings and visits from other divisions or committees:
 - (a) Committee on Publications and Cheminformatics Data Standards (L. McEwan). PubChem periodic system; fair data principles.
 - (b) Editor of Pure and Applied Chemistry (A. Ganesan)
 - (c) Visit from Interdivisional Committee on Terminology, Nomenclature, and Symbols (J. Stohner, B. Hibbert). Editorial process. Guidelines. Requirements for manuscripts. More responsibility to the Division
23. Review and approval of Action Items (L. Öhrström)

Action Items

1. The Committee on Chemistry Education seeks contributions to the topic “How to teach/explain electronic waste and its optimal treatment”. If you have an idea, contact Lidia Armelao.
2. Get someone from Div. II involved in project No. 2017-036-2-800 Graphical representation standards for chemical reaction diagrams.
3. Need to identify volunteers to check existing terms and new recommendations in the *Gold Book*.
4. Assign someone from Division II to maintain contact with IUPAP.
5. For 2024: nominate new members to Div. II and maintain balance in terms of geographical areas and scientific interests.
6. Make sure to report back to your NAO about your participation at the IUPAC Congress and divisional meeting.
7. Send news and announcements of future conferences of interest to inorganic chemists (Atoms, Molecules, Materials) to Dan Rabinovich for inclusion in the newsletter.
8. Inform Lidia Armelao of future conferences that need IUPAC endorsement.
9. Close Project 2009-046-2-200 Terminology and definition of quantities related to the isotope distribution in elements with more than two stable isotopes. Talk to Chair of the Task Group (Jan Kaiser) and related projects.
10. Notify Lidia Armelao if you want to participate as a Task Group member of a project to be proposed by Division VIII on updating the *Red Book*.
11. New project ideas: listen to your community and think about possibilities that fall within the IUPAC scope.
12. Lidia Armelao will present a proposal for a Div. II off-year meeting (in-person or virtual).
13. Reminder emails to monitors and task group chairs. Make an excel file with these data.
14. Assign a Project Coordinator for next biennium.
15. Set up a Zoom meeting in October to follow up on action items and the Newsletter.

Division II Meeting in The Hague, Netherlands



Front row (L to R): Johanna Irrgeher (CIAAW), Noemie Elgrishi (U.S. YO), Marvadeen Singh-Wilmot (Jamaica YO), Lidia Armelao, Yang Farina Abdul Aziz, Sadhna Mathura (South Africa NR 2024-25), Miki Hasegawa, Ayumi Ishii (Japan YO).
2nd row: M. Concepción Gimeno, Xiangkun Zhu.
3rd row: Jochen Vogl (CIAAW), Thomas Walczyk, Pavel Karen, Lars Öhrström, Ken Sakai.
4th row: Jorge Colón, Juris Meija, Onder Metin, Andrew Logsdail, Javier García Martínez (IUPAC President), Dan Rabinovich.

Special Issue of Pure and Applied Chemistry Honoring Dr. Mary L. Good (1931-2019)



Dr. Mary L. Good (1931-2019), the first woman to be elected as head of an IUPAC technical division, served as President of our Division for four years (1981-1985) and was a member of IUPAC's Bureau and its Executive Committee for eight years (1985-1993). She had a distinguished career in academia, industry, and government, and she was an enthusiastic supporter of chemistry outreach. As ACS president in 1987, she supported the creation of National Chemistry Day, which then became into National Chemistry Week. She obtained a Ph.D. in inorganic chemistry from the University of Arkansas (1955) and was a faculty member for 25 years at Louisiana State University and the University of New Orleans, where she conducted pioneering research in iodine and sulfur chemistry, ruthenium catalysts, and Mössbauer spectroscopy. She also served for four years (1993-1997) as Under Secretary of Commerce for Technology during the Administration of President Bill Clinton.

The Special Issue of Pure and Applied Chemistry honoring Dr. Mary L. Good was published in June 2023, with Division II members Lidia Armelao, Lars Öhrström, Dan Rabinovich, and Miki Hasegawa serving as Guest Editors. It contains nine peer-reviewed papers from authors based in Japan, Canada, Turkey, Italy, Norway, and the USA, and the variety of topics covered clearly reflects the diversity that characterizes the field of inorganic chemistry:

Metal ion-assisted supramolecular gelation

Shinya Kimura and Masamichi Yamanaka*

Synthesis and optical properties of phosphorus doped ZnO: X-ray absorption, X-ray emission, and X-ray excited optical luminescence studies

Zhi Liang Dong, Zhiqiang Wang,* Yun-Mui Yiu, Jiamin Fu, Bi-Hsuan Lin, Lo-Yueh Chang, and Tsun-Kong Sham*

A facile preparation of graphene hydrogel-supported bimetallic RuM (M: Co, Ni, Cu) nanoparticles as catalysts in the hydrogen generation from ammonia borane

Ibtihel Zaier, Zafer Eroglu, and Önder Metin

How to get deeper insights into the optical properties of lanthanide systems: a computational protocol from ligand to complexes

Silvia Carlotto,* Luca Babetto, Marzio Rancan, Gregorio Bottaro, Maurizio Casarin, and Lidia Armelao*

Heuristic algorithms for understanding chemistry via simple quantities

Pavel Karen

A Ni^{II}-W^V(CN)₈ layer magnet showing metamagnetic behavior

Shintaro Akagi, Junhao Wang, Kenta Imoto, Kunal Kumar, Shin-ichi Ohkoshi, and Hiroko Tokoro*

Transition metal complexes for electrochromic and electrofluorochromic devices

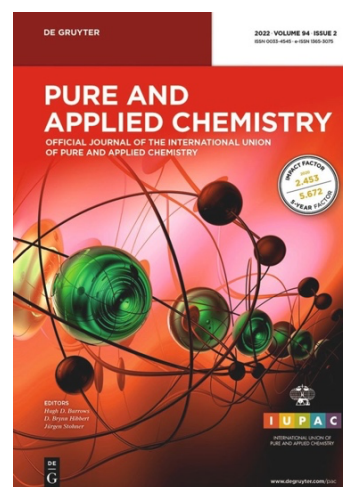
Yuna Kim* and Kazuya Kubo*

Dispersion control by using a bulky surfactant medium in the LB films for the enhancement of linearly polarized luminescence of Eu complexes

Keiichiro Ozawa, Hideyuki Tanaka, Hitomi Ohmagari, Megumi Ishii, Shinya Kimura, Kenta Goto, Shogo Kawaguchi, Masamichi Yamanaka,* and Miki Hasegawa*

Science brings nations together: Mary Good and the heaviest atoms and nuclei

Ani Aprahamian



Project Highlights

*Summarized by Robin Macaluso & Dan Rabinovich
Project Coordinators*

2018-030-2-200 (Karen) *Toward a comprehensive definition of valence*

The task group has submitted to *Pure and Applied Chemistry* a Technical Report describing the task group's investigation of the background to formulate a definition of valence that covers best the current use and perception of valence as a quantity among chemists. The first step was a survey conducted among IUPAC chemists on a group of examples, which revealed seven alternative definitions of quantities that could be considered valence. These quantities were then evaluated on about fifty telling chemical formulas to be compared with the actual recent or current use searched by Google Scholar. The results suggest two main areas of the relatively infrequent use of valence as a quantity, which differ in perception. One is the organic chemistry; the other is chemistry of metals. The task group is about to draft a Recommendation manuscript that reflects the current use and suggests ways how to avoid ambiguity of these two contexts of the valence quantity.

2020-022-1-200 (Drabik) *Gold Book Update of Terms for Inorganic Chemistry*

The project aims to review, and terms and definitions contained in the Gold Book: metal–organic framework, coordination polymer, and coordination network. In addition, the *Definition of materials chemistry* has been submitted as a Recommendation.

In May 2023, the Task Group Chair reported that, from IUPAC Recommendation “Terminology of metal–organic frameworks and coordination polymers” (<https://doi.org/10.1351/PAC-REC-12-11-20>), the task group formulated the proposal to include into the IUPAC Gold Book the definitions of three new terms: coordination polymer, coordination network, and metal–organic framework (MOF). The proposal is with Division II, ICTNS, and JSGB for approvals and final processing.

New Projects & Ideas

Summarized by Dan Rabinovich, Coordinator of Projects

2022-016-1-021 Effective teaching tools and methods to learn about e-waste

This project involves cooperation between three standing committees and two divisions (CHEMRAWN, CCE, COCI, Division II and Division VI).

Task Group Chair: Francesca (Fran) M. Kerton (Memorial University of Newfoundland, Canada)

Task Group members: Lidia Armelao, Silvia Borsacchi, Premnadh Kurup, Annette Lykknes, Robin Macaluso, Maurizio Peruzzini, Oluseun Elizabeth Popoola, Diane Purchase, Alessandra Sanson, Angela Serpe

Website: <https://iupac.org/project/2022-016-1-021>

Start date: 24 August 2022

One of the recommended outcomes from the Future Actions Committee Report formulated at CHEMRAWN XXII 'E-waste in Africa' was to "Develop a course in e-waste for university students." This project will address and provide educational materials and insights for younger students and teachers working in secondary education. Knowledge about chemical problems related to e-waste handling and recycling is limited even among well-educated chemists. This is probably due to lack of focus on such topics at all stages of chemical education. The objective of this IUPAC project is to prepare and collect teaching materials related to e-waste from a chemical perspective and share these as widely as possible. This will be achieved through publication of a special issue of *Chemistry Teacher International* and a webinar. We note that *CTI* is an open access journal and this will allow broad dissemination in the chemical education community worldwide.

2023-014-2-200 Terminology and Definitions of Quantities Relating to Isotopic Analyses

Task Group Chair: Philip Dunn (National Measurement Laboratory, United Kingdom)

Task Group members: John Karl Böhlke, Richard H. Brown, Federica Camin, Michelle Chartrand, Tyler B. Coplen, Giancarlo D'Agostino, Nicolas Dauphas, John Eiler, Jan Kaiser, Rebecca Kraft, Kyoung-Seok Lee, Juris Meija, Zoltán Mester, Martin Miller, Olaf Rienitz, Thomas Röckmann, Alex Sessions, Frank Vanhaecke, Jochen Vogl, Jun Wang

Website: <https://iupac.org/project/2023-014-2-200>

Start date: 20 November 2023

New ideas:

1. **Definition of metalloids:** Dan Rabinovich would lead this project, with the task group to find out whether there is a wide general agreement in the chemical community about which elements are metalloids and how to define these elements. Anybody interested in the project should contact Dan for further information.

2. There are multiple ideas for proposals from **CIAAW** in various stages of development:

- Statistical Models and Data Evaluation
- Machine-Accessible Periodic Table (MAPT) to be submitted by the Committee on Publications and Cheminformatics Data Standards
- Development of (technical) guidelines
- Updated periodic table of isotopes and elements in translations (Chinese, Russian)
- Standard reference data for atmospheric gases
- Absolute isotope ratios of delta-zero materials
- Development of practical technical guidelines
- Evaluation of the natural variation of Os and Hf

Upcoming Conferences

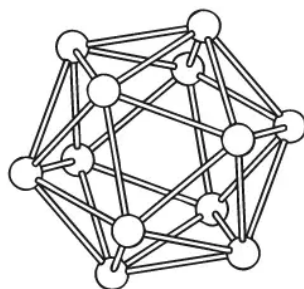
9th International Workshop of Layered and Nanostructured Materials
23 - 26 June, 2024
Perugia, Italy

<http://layeredmaterials2024.chimfarm.unipg.it>



Abstract submission deadline: February 28, 2024
Registration and Payment deadline: April 30, 2024
For information contact: layeredmaterials2024@gmail.com

45th International Conference on Coordination Chemistry
28 July – 3 August, 2024
Fort Collins, Colorado | USA
<https://iccc2024.colostate.edu>



ICCC 2024

Symposia:

The Intersections of Coordination Chemistry, Biology, and Medicine
Materials Chemistry Through the Lens of Coordination
Unravelling the Mysteries and Applications of Heavy-elements (4f, 5f)
Coordination Chemistry Solutions to Global Challenges in Energy and Sustainability
3D-Coordination Networks, Polymers, and Organometallic Compounds
Current and Future Visions in Coordination Chemistry

Abstract submission deadline: April 26, 2024
Abstract submission [link](#)
Registration [link](#)

South African Chemical Institute (SACI)'s

INORGANIC AND CARMAN
2024




**CHAMPAGNE SPORTS RESORT
CENTRAL DRAKENSBERG
KWAZULU-NATAL
SOUTH AFRICA**

SAVE THE DATE: 2 – 6 JUNE 2024

Contact chairperson for more info: singht1@ukzn.ac.za



We welcome you to
Malaysia in 2025!

 Kuala Lumpur, Malaysia

IUPAC 2025

50th World Chemistry Congress and 53rd General Assembly

11th – 18th July 2025





ICBIC 21

21st International Conference on Biological Inorganic Chemistry

26-31 July 2025

Irvine, California | USA

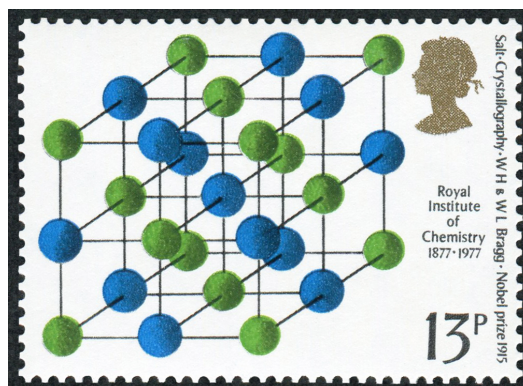
<https://www.icbic2021.org>

Global Women's Breakfast

<https://iupac.org/gwb/>



Inorganic Chemistry Stamp



The Inorganic Chemistry Division has traditionally featured members representing “atoms”, “molecules”, and “materials”. The postage stamp illustrated above, depicting the crystal structure of sodium chloride, was issued in the United Kingdom in 1977 to mark the centennial of the Royal Institute of Chemistry and the 1915 Nobel Prize in Physics shared by Sir William H. Bragg and his son William L. Bragg “for their services in the analysis of crystal structure by means of X-rays”.

Inorganic Chemistry Division Membership 2024-2025

Name	Status	Term	NAO
Lidia Armelao	President	2022-2025	Italy
Jorge Colón	Secretary	2024-2027	Puerto Rico
Robin Macaluso	Vice President	2024-2027	USA
Yang Farina Abdul Aziz	TM	2024-2025	Malaysia
M. Concepción Gimeno	TM	2022-2025	Spain
Miki Hasegawa	TM	2024-2025	Japan
Pavel Karen	TM	2024-2025	Norway
Andrew Logsdail	TM	2024-2025	UK
Juris Meija	TM	2022-2025	Canada
Onder Metin	TM	2024-2025	Turkey
Ally Aukauloo	AM	2024-2025	France
Bas de Bruin	AM	2024-2025	Netherlands
Mayoro Diop	AM	2022-2025	Senegal
Lukáš Krivosudský	AM	2024-2025	Slovakia
Alessandra Sanson	AM	2022-2025	Italy
Xiangkun Zhu	AM	2022-2025	China/Beijing
Jitendra Bera	NR	2024-2025	India
Suchada Chantrapromma	NR	2024-2025	Thailand
João Galamba Correia	NR	2024-2025	Portugal
Maja Gruden	NR	2024-2025	Serbia
Rosalie Hocking	NR	2022-2025	Australia
Jan John	NR	2024-2025	Czech Republic
Sadhna Mathura	NR	2024-2025	South Africa
Vladimir Stilinović	NR	2024-2025	Croatia
Radostina Stoyanova	NR	2024-2025	Bulgaria
Yi-Chou Tsai	NR	2024-2025	China/Taipei

P term 4Y, no PP