

A brief guide to measurement uncertainty (IUPAC Technical Report)

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This *Brief Guide* reintroduces readers to the main concepts and technical tools used for the evaluation and expression of measurement uncertainty, including both classical and Bayesian statistical methods. The general approach is the same that was adopted by the Guide to the Expression of Uncertainty in Measurement (GUM): quantities whose values are surrounded by uncertainty are modeled as random variables, which enables the application of a wide range of techniques from probability and statistics to the evaluation of measurement uncertainty. All the methods presented are illustrated with examples involving real measurement results from a wide range of fields of chemistry and related sciences, ranging from classical analytical chemistry as practiced at the beginning to the 20th century, to contemporary studies of isotopic compositions of the elements and clinical trials. The supplementary material offers profusely annotated computer codes that allow the readers to reproduce all the calculations underlying the results presented in the examples.

<https://iupac.org/project/2015-024-2-500/>

Definition of the pnictogen bond (IUPAC Recommendations 2023)

Giuseppe Resnati, David L. Bryce, Gautam R. Desiraju, Antonio Frontera, Ingo Krossing, Anthony C. Legon, Pierangelo Metrangolo, Francesco Nicotra, Kari Rissanen, Steve Scheiner and Giancarlo Terraneo

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This recommendation proposes a definition for the term “pnictogen bond”; the term pnictogen bond designates a subset of the attractive interactions between an electrophilic region on a pnictogen atom in a molecular entity and a nucleophilic region in another, or the same, molecular entity.

<https://iupac.org/project/2016-001-2-300/>

IUPAC Distinguished Women in Chemistry and Chemical Engineering Awards 2023— Preface of the special collection of invited papers by recipients of the 2023 Awards

Mary J. Garson

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<https://doi.org/10.1515/pac-2024-0022>

The 2023 awardees were selected from an impressive list of high achieving and creative women chemists or chemical engineers from all around the globe. In their individual career stories, each of the winners reveals a willingness to share their expertise and experiences with other chemists, and a passion for science. Their activities and outreach advance the chemical and chemical engineering sciences in so many diverse ways. The collection of articles in this January 2024 issue of *Pure and Applied Chemistry* have been specially prepared by some of the 2023 awardees. While some manuscripts explore topics within the awardee's research interests, others chart individual career journeys. This special issue will inspire women scientists worldwide and provide encouragement to all of us to advance the chemistry of the future.

This year collection includes:

- **Yoshihiro Sohtome and Mikiko Sodeoka***
Catalytic oxidative carbon–carbon bond-formations of benzene-1,2-diols
- **Suprotim Koley, Monika Gaur, Nilotpal Barooah, Achikanath C. Bhasikuttan and Jyotirmayee Mohanty***
Supramolecular assemblies with macrocyclic hosts: applications in antibacterial activity
- **Marinda Li Wu***
Women in chemistry: remarkable progress, but are we there yet?
- **Madeleine S. Woodward, Danielle E. Runacres, Julian Grigg, Imtiaz Khan, William Levason, Graeme McRobbie and Gillian Reid***
Automating the production of $[\text{Fe}^{18}\text{FF}_2(\text{BnMe}_2\text{-tactn})]$ and investigating radiostabilisers for use with high-activity $^{18}\text{F}^-$
- **Lidia Armelao*, Maria Rando, Silvia Carlotto, Irene Motta, Gregorio Bottaro and Marzio Rancan**
Bridging two worlds: $(\text{DABCO-H})\text{CuKI}_3$ a hybrid copper iodide phosphor with a perovskite structure



Eleven of the twelve awardees of the 2023 Distinguished Women in Chemistry recognized in 2023 in Den Haag during the IUPAC World Chemistry Congress Meeting (L to R): Javier García-Martínez (IUPAC President), Mary Garson (Chair, selection jury), Jyotirmayee Mohanty, Marcia Foster Mesko, Laura McConnell, Marinda Wu, Nguyen Thi Kim Thanh, Chunying Chen, Mikiko Sodeoka, Annette Beck-Sickinger, Gill Reid, Lidia Armelao, and Tatjana Parac-Vogt. Award recipient Bin Liu was unable to attend the award ceremony.

- **Ann Van der Jeugd and Tatjana N. Parac-Vogt***
Empowering women in science through role models, mentors, and support groups: a personal perspective
- **Chiara Ruggirello, Karin Mörl and Annette G. Beck-Sickinger***
Peptides for therapeutic applications – challenges and chances

<https://www.degruyter.com/journal/key/pac/96/1/html>
<https://iupac.org/iupac-2023-distinguished-women/>

Special issue of POLY-CHAR 2023 and in memory of Professor Melissa Chan Chin Han

Jiayong Jin and Holger Schönherr
Pure and Applied Chemistry, 2024
 Vol. 96, no. 2, 2024, pp. 147-148
<https://doi.org/10.1515/pac-2024-0202>

The IUPAC-endorsed conference POLY-CHAR [Auckland] was held at Auckland, New Zealand from the 22nd to the 26th of January, 2023. POLY-CHAR is a nonprofit, non-governmental organisation fostering a

friendly environment for sharing information, establishing student exchange and strengthening international cooperation. An important goal of POLY-CHAR is offering a forum for PhD students and young researchers to create their own scientific networks and experience a vested scientific community.

After postponement from January 2021, POLY-CHAR [Auckland] 2023 was the first live conference to be hosted since the two purely digital events of POLY-CHAR [Venice] 2021 and POLY-CHAR [Halle-Siegen] 2022. The POLY-CHAR regular attendees and newcomers were able to gather in-person after years of suspension during the pandemic. About 180 scientists attended POLY-CHAR 2023 from 29 countries and the conference programme consisted of a total of seven plenary speakers, 15 showcase speakers, 27 keynote speakers, 43 oral speakers and 19 poster presenters. The four-day conference plus one-day pre-conference workshop covered the following technical topics:

- Advances in polymer physical and structural characterisation
- Advances in synthetic polymer chemistry
- Biological functional polymers
- Polymers additive manufacturing (3D/4D printing)
- Polymers for molecular separation, energy, and environment