Making an imPACt

Recent IUPAC technical reports and recommendations that affect the many fields of pure and applied chemistry.
See also www.iupac.org/what-we-do/journals/

A brief guide to measurement uncertainty (IUPAC Technical Report)

Antonio Possolo, David Brynn Hibbert, Jürgen Stohner, Olha Bodnar and Juris Meija
Pure and Applied Chemistry, 2024
Vol. 96, no. 1, pp. 113-134
https://doi.org/10.1515/pac-2022-1203

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
Pure and Applied Chemistry, 2024
Vol. 96, no. 1, pp. 135-145
https://doi.org/10.1515/pac-2020-1002

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
Pure and Applied Chemistry, 2024
Vol. 96, no. 1, 2024, pp. 1-4
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 [$Fe^{18}FF_2$($BnMe_2$-tacn)] and investigating radiostabilisers for use with high-activity [^{18}F]F^-
- **Lidia Armelao*, Maria Rando, Silvia Carlotto, Irene Motta, Gregorio Bottaro** and **Marzio Rancan**
  Bridging two worlds: (DABCO-H)$CuKI_3$ a hybrid copper iodide phosphor with a perovskite structure