



Elements of IYPT2019

CHEMISTRY International

The News Magazine of the
International Union of Pure and
Applied Chemistry (IUPAC)

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Managing Editor:

Fabienne Meyers
IUPAC, c/o Department of Chemistry
Boston University
Metcalf Center for Science and Engineering
590 Commonwealth Ave.
Boston, MA 02215, USA
E-mail: edit.ci@iupac.org
Phone: +1 617 358 0410

Production: Joshua Gannon

Design: Stuart Wilson

Printed by: Sheridan Communications

Subscriptions

Chemistry International (ISSN 0193-6484) is published 4 times annually in January, April, July, and September by De Gruyter, Inc., 121 High St., 3rd Floor, Boston, MA 02110 on behalf of IUPAC. The 2019 subscription is USD 74.00 for individuals or USD 116.00 for institutional subscription. Special rates for Print and Print + Online are available for IUPAC Members and Affiliates Members; see <https://iupac.org/what-we-do/journals/chemistry-international/> or <https://www.degruyter.com/ci> for more information.

ISSN 0193-6484, eISSN 1365-2192

Periodicals postage paid at Durham, NC 27709-9990 and additional mailing offices. POSTMASTER: Send address changes to *Chemistry International*, IUPAC Secretariat, PO Box 13757, Research Triangle Park, NC 27709-3757, USA.



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Cover: The chemical elements tiles illustrating the features of this special IYPT2019 issue of *Chemistry International* are part of the IYPT Timeline of Elements project organized by Chem 13 News and the University of Waterloo in Ontario, Canada. See Elements of Credits page 3.

The Periodic Table of Chemical Elements has without any doubt developed to one of the most significant achievements in natural sciences. The Table (or System, as called in some languages) is capturing the essence, not only of chemistry, but also of other science areas, like physics, geology, astronomy and biology. The Periodic Table is to be seen as a very special and unique tool, which allows chemists and other scientists to predict the appearance and properties of matter on earth and even in other parts of our the universe.

March 1, 1869 is considered as the date of the discovery of the Periodic Law. That day Dmitry Mendeleev completed his work on *"The experience of a system of elements based on their atomic weight and chemical similarity."* This event was preceded by a huge body of work by a number of outstanding chemists across the world. We have elaborated on that in the January 2019 issue of *Chemistry International* (<https://bit.ly/2IHKzS5>). The greatness of Mendeleev was that not only did he leave spaces for elements that were not yet discovered, but he also predicted properties of five of these missing elements and their compounds. Within Mendeleev's lifetime, three of these missing elements were discovered by others. Years after Mendeleev's discovery, the inert gases were discovered and could be placed in the Table.

During the year 2019, we are celebrating worldwide the Periodic Table as Mendeleev proposed it in 1869 and the Table's on-going developments. The Table can be depicted in a variety of formats, and today a database of (almost) all Periodic Tables, used in the last 150 years, worldwide, is available and maintained by Mark Leach: https://www.meta-synthesis.com/webbook/35_pt/pt_database.php

The year has been full of activities worldwide. Too many to mention, and those reported are listed on the website **www.iypt2019.org**. On January 29, the flagship Opening Ceremony was celebrated with over 700 delegates from over 50 countries in Paris on the UNESCO premises. Now, we are looking forward to the Grand Closing Ceremony, in Tokyo, Japan on December 5. Our Japanese colleagues are preparing an exciting program, promising for a high-level closure of our IYPT2019; see <https://iypt.jp/en.html>

The International Year of the Periodic Table of Chemical Elements has no doubt enhanced international cooperation by coordinating activities between learned societies, educational establishments, and industry. By focusing specifically on new partnerships and initiatives in the developing world and by establishing durable partnerships to ensure that these activities, goals and achievements continue in the future beyond the year 2019, a major step had been made. The success of the activities has become very clear already during the Opening Ceremony and the large number of international events that took place throughout 2019.

This special issue of *Chemistry International* is meant to show several aspects of chemical elements, celebrating once more IYPT2019. I do wish that the readers will enjoy reading this excellent issue as much as I did.

Jan Reedijk <reedijk@chem.leidenuniv.nl> is co-chair with Natalia Tarasova of the InterUnion Management Committee for IYPT 2109. (See IYPT2019 Introduction, CI Jan 2019, p. 2 <https://doi.org/10.1515/ci-2019-0101>)