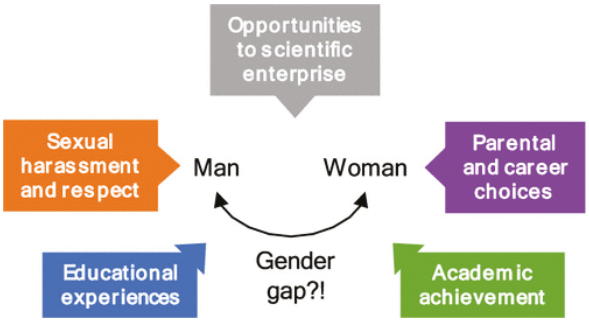

reported having more research resources than women. More women than men indicated that their careers had influenced their decisions about their children, marriage, or long-term partnership across high and low HDI regions and employment sectors. Finally, women submitted fewer journal articles than men in the past five years, and this gender difference was also seen in respondents from both high and low HDI regions and working in industry. In contrast, by employment sector, the gender differences were relatively small.

For more information and comment, contact Task Group Chair Mark C. Cesa or Mei-Hung Chiu <mhchiu@ntnu.edu.tw> https://iupac.org/project/2020-016-3-020

Medicinal Chemistry in Drug Discovery & Development, India

A new project of the Chemistry and Human Health Division supports the objective of the Medicinal Chemistry/Drug Discovery & Development India (MCADDI), which is to build and optimize a basic drug discovery & development course for industrial and academic scientists, including medicinal chemists, in India and other South Asian countries. The success of the 2019 program, partly supported by a IUPAC grant, and the feedback from the Industry and Academic groups, post COVID break of 4 years, strongly encourages the task group to continue our theme of applied chemistry education in relation to drug design and development. Biocon Academy (Bangalore, India) has generously agreed to host this event again in 2024 and will provide the access to their facility for the faculty and attendees. This 5-day course will broaden the focus of the program compared to the 2019 Course by adding new lectures on the use of special chemistry topics such as Heterocyclic and Fluorine Chemistry in Drug Discovery, and adding a lecture on antibody-drug conjugate (ADC) discovery and development.

The first part session of the course will be focused on the fundamentals of drug discovery and the second part will be focused on the application of new technologies in the drug discovery and development process. The 2024 program will dedicate a full day session to the discovery and development of biologic drugs, including antibodies, antibody-drug conjugates and therapeutic proteins. The increase in medicinal chemistry employment in Indian and southeast Asian pharmaceutical companies, and in Contract Research Organizations (CROs) collaborating with US and European companies, has created a vital need for chemists to acquire state of the art knowledge of medicinal chemistry and other closely related disciplines.

The performance and value of the MCADDI courses (2013, 2015, 2017, 2019) has been assessed by the participants and faculty, and has received positive feedback from both industrial and academic scientist in India. The 2024 course will also be assessed to determine whether to continue in the same format, or evolve the course further in order to meet the needs of Indian and Southeast Asian medicinal chemists. The desired outcome will be to enroll a new and broader set of drug discovery scientists from industry and academia. The number of participants would be about 100-120 from academia and industry, similar to the attendance in 2019, and the goal is to provide participants with a strong introduction to the fundamentals and practice of medicinal chemistry in drug discovery, including the use of tools such as computer-assisted drug design (CADD) and automated synthesis. The task group is planning to actively seek the participation of scientists from other South Asian countries such as Singapore, Malaysia, South Africa, *etc.*

For more information and comment, contact Task Group Chair Neel Balu Balasubramanian or William J. Greenlee https://iupac.org/project/2023-033-2-700

Advanced Technologies for Carbon Sequestration and Capture

This new project, building on the insights of the 'Harmonizing Carbon Sequestration Measurement' project (2022-010-2-600), aims to evaluate the efficacy of innovative carbon sequestration technologies. Originating from identified knowledge gaps in the previous project, it seeks to address issues on CO_2 emissions understanding, consistent accounting systems, and the necessity for novel mitigation measures.

The project will generate a state-of-the-art technical report on global carbon sequestration and capture (CSC) technologies. Key objectives include assessing the techno-economic aspects of promising CSC systems, evaluating recent advances in technologies like direct carbon capture and novel biofuels, employing expert judgment to evaluate credible CSC system models, and providing an impartial analysis of challenges and opportunities in CSC.

The project adopts a multidisciplinary approach, involving a systematic literature review, interdisciplinary analysis, critical evaluation, and technical expertise. It aims to synthesise recent insights, stimulate collaboration, and promote partnerships among technology providers and industries globally. Collaboration is anticipated across various IUPAC Divisions, ensuring a comprehensive review encompassing peer-reviewed articles, research papers, patents, and industry reports.

Critical evaluation includes criteria recommended by the harmonizing carbon sequestration measurement project, considering factors such as cost-effectiveness, scalability, energy efficiency, regulatory compliance and sustainability. The global perspective ensures relevance to an international audience, utilizing IUPAC's recognition and reach to disseminate findings and foster collaboration among diverse stakeholders and facilitate impactful global collaboration.

For more information and comment, contact Task Group Chair Diane Purchase <D.Purchase@mdx.ac.uk> | https://iupac.org/project/2023-023-1-600

Terminology and Symbolism for Mechanochemistry

Classical solution chemistry seems not to fit properly in the new paradigm of green chemistry, which is crying out for a drastic reduction in the use of solvents, improved atom-economy, energy and cost efficiency. Mechanochemistry fits this role.

Mechanochemistry studies the effects of mechanical energy forces on physicochemical changes and transformations. Rapidly growing, it has applications in various areas of research, including organic synthesis, materials science, nanotechnology, catalysis, and green chemistry. In 2019, IUPAC acknowledged mechanochemistry as one of the top ten technologies for a more sustainable future, recognizing its potential as an environmentally friendly option for developing new processes and materials.

Nevertheless, the expansion of mechanochemistry and the wide range of materials, equipment, methods, and practices involved, have made obvious the lack of standardization and clarity in its terminology and symbolism. The ScienceDirect overview of the subject alone contains over twelve descriptions that provide definitions of mechanochemistry. Curiously, although the IUPAC Compendium of Chemical Terminology (the Gold Book) describes a mechanochemical reaction as one "induced by the direct absorption of mechanical energy," it leaves undefined just what constitutes "mechanical energy," and there is only one reference to mechanochemical processes, namely relating to polymers and functional polymeric materials. Detailed terminology pertaining to mechanochemistry and related disciplines is lacking.

With the support of IUPAC, this initiative will establish uniformity in the terminology and classifications employed in mechanochemistry. Additionally, standardized symbolism will be proposed to facilitate communication within the mechanochemical community. The project, which involves multiple stakeholders, will result in recommendations that will contribute to a more organized development of the subject and enhance its visibility and credibility as a distinct and important branch of chemistry.

For more information and comment, contact Task Group Chair Evelina Colacino <evelina.colacino@umontpellier.fr> https://iupac.org/project/2023-034-2-100