



International Organization for Chemical Sciences in Development

*Promoting the chemical sciences
for the benefit of society*

Organization Outline and Strategy 2019-2021

IOCD builds on four decades of achievement in promoting the chemical sciences for sustainable, equitable human development and economic growth. We seek to help build capacity in the chemical sciences and to collaborate with other organizations to advance sustainable development globally through strengthening and repositioning policy, research, practice and education in the chemical sciences.



Pierre Crabbé
1928- 1987

Chemist, humanitarian
and founder of IOCD¹

IOCD
Namur, Belgium
2019

www.iocd.org

Chemistry – central science and a platform science

Chemistry provides understanding of the physical and chemical properties of atoms and molecules and practical methods for creating new molecular structures and materials with useful applications.

It also contributes to fundamental aspects of a range of other sciences, underpinning the dramatic advances seen in recent decades in such fields as biotechnology, energy, environment, genetics, materials and medicine

Role of the chemical sciences in development

During the last two centuries, the chemical sciences have contributed enormously to **broad improvements in human well-being** (including enhancements in health and life expectancy) and to **wealth creation** for individuals and nations.² Landmark examples include:

- **Innovations in the generation, storage and use of energy**
- **Creation of new materials**
- **Advances in agriculture, food and nutrition**
- **Better health**
- **Economic growth**

The UN Sustainable Development Goals (SDGs) for 2030 reflect a new global vision of shared responsibility for global development. Achieving them requires harnessing science, technology and innovation for development. **IOCD's action group, Chemists for Sustainability, has highlighted the roles that chemistry must play in achieving the SDGs.**³

IOCD's Mission and objectives

Established¹ at UNESCO in 1981 through the leadership role of Pierre Crabbé, IOCD was *the first international non-governmental organization devoted to enhancing the role of the chemical sciences in development* and involving chemists in low- and middle-income countries, enabling them to contribute to key science and technology areas for development.^{4,5}

IOCD's current mission is to *promote the pursuit and application of the chemical sciences for the benefit of society.*

IOCD's objectives are to *champion the achievement of the multiple potentials of chemistry to serve as a creative fundamental science; as a central science contributing to developments in adjacent sciences; as a source of highly valuable applications; and as a science that can contribute to solving major global challenges including sustainability.*

IOCD's Strategy 2019-2021

The focus of IOCD's work in the period is on *promoting the chemical sciences for development and especially for global sustainability.*

IOCD fosters and highlights the contributions that the chemical sciences can make, in education, research and practice, to sustainable, equitable human development and to tackling emerging global challenges, including those contained in the UN Sustainable Development Goals.



Chemists for Sustainability (C4S)

This IOCD Action Group was formed by an international group of chemists who believe that *chemistry and related sciences have indispensable roles to play in helping the world to achieve the SDGs*. The group has served advocacy and think-tank roles through written articles, lectures and web materials.

There are currently four core members: **Henning Hopf, Alain Krief, Stephen Matlin and Goverdhan Mehta**. Others are co-opted to bring additional perspectives to the work.

The **C4S** group argues that chemistry as a discipline needs redesign and reform, in order to ensure that it is attractive and productive as a science and relevant to solving 21st century challenges. The group has presented the concept of **'one-world' chemistry** – a new orientation for the discipline which emphasises the need for chemistry to be a science for the benefit of society, embracing the understanding that human health, animal health and the environment are all interconnected.⁶ This requires ethical behaviour at all times, the employment of **systems thinking** in relation to all aspects of chemistry education and practice, and strengthening the capacity of chemistry for **cross-disciplinary working**.

Details of all these and other activities of IOCD can be found on the website:
www.iocd.org

Capacity building in chemistry education

IOCD aims to strengthen chemical sciences education by developing and disseminating knowledge and learning tools. Activities include the provision of **web-based resources**, e.g.: on-line tutorials in organic chemistry, available in Spanish⁷ and training in practical medicinal chemistry. The **Chemistry Education Action Group** helps to push forward this area.

IOCD supports and participates in a **project of the International Union for Pure and Applied Chemistry** which is working with a global group of chemistry educators to develop chemistry education concepts, tools and content for infusing systems thinking into chemistry education.⁸

Chemistry for better health and a better environment

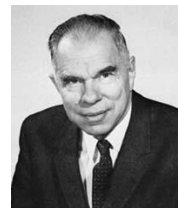
IOCD aims to foster expanded use of the chemical sciences: to improve health by promoting the uptake and application of relevant techniques for discovery, analysis, synthesis and manufacture of health-related products; and to contribute to a better environment through strengthening sustainable approaches to generating and using clean energy and materials.

IOCD supports a Working Group on Materials for Energy Conversion, Saving and Storage (MATECSS).⁹ The group is chaired by Prof. Federico Rosei, who holds the UNESCO Chair in Materials and Technologies for Energy Conversion, Saving and Storage at the INRS, Montreal.



Impact of IOCD

IOCD has helped raise awareness of the importance of the chemical sciences nationally and internationally and the profile of chemists and their contributions to development. This was aided by success in attracting prominent chemists to IOCD's cause, including the Presidents (two Nobel laureates), Council (included four additional Nobel laureates) and leaders and members of its Senior Advisory Council, action groups and projects.



Glen T. Seaborg
Nobel Laureate in
Chemistry

IOCD President
1981-1992



Jean-Marie Lehn
Nobel Laureate in
Chemistry

IOCD President
Since 1993

General Assembly 2019

Members:

Berhanu Abegaz (Ethiopia)
Jean-Pierre Décor (France)
Henning Hopf (Germany)
Alain Krief (Tunisia/France/Belgium)
Jean-Marie Lehn (France)
Stephen Matlin (United Kingdom)
Goverdhan Mehta (India)
Vivian Yam (China)

Observers:

Carlos Rius (Mexico)
Michael Tempesta (United States)

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9. Materials for Energy Conversion, Saving and Storage (MATECSS). www.iocd.org/WhatWeDo/Current/matecss.shtml

For further information and details of IOCD's programmes

Visit IOCD's Website:
www.iocd.org

Contact IOCD's secretariat:
Prof Alain Krief
Executive Director, IOCD
61 Rue de Bruxelles,
Namur 5000, Belgium

Tel: +32 81 724 548
alain.krief@unamur.be

S.A Matlin. January 2019