International Organization
for
Chemical Sciences in Development

International Symposium and Discussion

Crossroads of Innovation in Organic Chemistry

Thursday 5 July 2012
University of Namur

Briefing Note

Introduction

As well as providing fundamental knowledge about the physical and chemical properties of atoms and molecules and the functioning of the basic building blocks of life, the chemical sciences have made outstanding contributions to economic and development and human wellbeing during the last two centuries and have underpinned the dramatic advances seen in recent decades in such fields as biotechnology, energy, the environment, genetics, materials and medicine.[1]

But the benefits from advances in chemistry and other sciences have not been evenly distributed globally. The least industrially and technologically advanced countries have remained the poorest and people in low- and middle-income countries (LMICs) often have much lower life expectancies than those in high-income countries. A large part of the inequalities can be traced to major differences in rates of technical progress (i.e. a combination of technological advances and their diffusion and uptake in different countries and the capacities of the countries themselves to conduct and apply research).

IOCD[2] was launched at UNESCO in Paris in 1981 as the first international non-governmental organization specifically devoted to enhancing the role of the chemical sciences in the development process and involving chemists in LMICs. Now in its fourth decade, IOCD continually adapts to the changing global scene and seeks new ways to achieve its mission.

The Challenge

We live in a world that is rapidly changing, with a host of emerging global challenges that require not only the attention of the best scientific minds but also concerted effort involving collaborations among countries on all the continents. In every field – population expansion, environment, climate change, energy, materials, agriculture, water, human health – the chemical sciences have vital contributions to make to meeting the challenges.

IOCD works to catalyse and facilitate these contributions, seeking to highlight specific challenges and the pathways to address them; to stimulate the enthusiasm of chemists everywhere; to galvanise concerted action; and to celebrate achievements.

Crossroads of Innovation

The International Symposium in Namur will bring together a number of outstanding scientists who work on critical issues where chemical sciences are at the forefront of innovation to meet global challenges. They will highlight the advances that chemistry is making in relation to new materials (e.g. graphene, designer enzymes) that will have far-reaching consequences in fields as diverse as energy, communications and biotechnology. Speakers will also reflect on the range of global challenges where chemical sciences have a vital role to play and on how science and technology can improve the lives and wellbeing of present and future generations.

Adding Value to the Chemical Sciences for Development: the Future Role of IOCD

The Namur Symposium also provides an important opportunity to reflect on the contributions that IOCD can make and how it can further evolve and adapt in order to sustain and increase its impact. To this end, IOCD will convene a special discussion session which will focus on the potential for new initiatives, including:

- Engaging new generations of chemists in global development challenges
- Prizes for outstanding contributions to chemical sciences for development

About IOCD

Founded in 1981, IOCD began by recognising why it had been so difficult to pursue chemistry and related sciences in LMICs in the past. By the 1980s, many chemists from LMICs had been, or were being, trained in research in universities in high-income countries, but found it difficult to engage in productive and rewarding careers in research in the growing number of university chemistry departments in their home countries. Common problems included lack of access to funds, laboratory supplies and equipment and difficulty in staying abreast of the latest advances in their fields. IOCD's initial response was a twin track approach of active research support and capacity building, achieved through the operation of its scientific working groups and analytical service centres. Programmes of research were established to focused on major development challenges of the times, including family planning, drugs for the treatment of tropical diseases, the utilization of natural products and enhancing the environment.

Overall, in its first 30 years of operation, the impact of IOCD has been to help highlight the importance of the chemical sciences as contributors to development; to raise the profile of the field and its practitioners; to initiate, promote or sustain a number of technical, managerial, policy and collaborative networks and projects advancing chemical sciences in LMICs; and to contribute to vital resources for teaching, learning and research.

In its fourth decade, IOCD's new strategic plan[2] focuses on three priorities, pursued through its working groups and projects, which aim to achieve IOCD's mission and contribute to the achievement of the Millennium Development Goals (MDGs):

- Chemistry for better health
- Chemistry for a better environment
- Capacity building in chemical education

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1 S.A. Matlin, B.M. Abegaz. *Chemistry for development.* In: J. Garcia-Martinez, E. Serrano-Torregrosa (Eds), *The Chemical Element: Chemistry's Contribution to Our Global Future*, Wiley-VCH, Weinheim, 2011, Chapter 1, 1-70.

2 International Organization for Chemical Sciences in Development. www.iocd.org