

## Celebrating the ‘mother of all science’

What is special about an International Year of Chemistry (IYC)? It is not just another year being ‘celebrated’ in the name of an area that is important but not as popular as it should be, and needs to be communicated about. Expectations are high that 2011 will be a head start in passing the excitement of chemistry to non-chemists and will bring forth its potential<sup>1</sup>. According to the prospectus of IYC ([http://www.chemistry2011.org/assets/42/IYC\\_prospectus.pdf](http://www.chemistry2011.org/assets/42/IYC_prospectus.pdf)), the decision to declare 2011 as IYC was taken by the United Nations General Assembly held in 2008 to celebrate the achievements and to highlight the contributions of chemistry.

The IYC also draws attention to women chemists as the year coincides with the 100th anniversary of the Nobel Prize for Chemistry to Marie Curie for the discovery of radium and polonium elements ([http://nobelprize.org/nobel\\_prizes/chemistry/laureates/1911/](http://nobelprize.org/nobel_prizes/chemistry/laureates/1911/)). It is also 350 years<sup>2</sup> for the publication of Robert Boyle’s *The Sceptical Chymist* that gave birth to ‘modern chemistry’. The International Association of Chemical Societies has also completed 100 years of its foundation in 2011. The association was later succeeded by the International Union of Pure and Applied Chemistry (IUPAC) ([http://www.iupac.org/web/nt/2008-12-30\\_IYC](http://www.iupac.org/web/nt/2008-12-30_IYC)), more popular for its chemical nomenclature system. Revolving around the theme, ‘Chemistry – our life, our future’ the activities will focus on sustainable development, on encouraging the young and also on public outreach. (For details of the events planned worldwide see: <http://www.chemistry2011.org/participate/events/>.)

In India the celebration began with C. N. R. Rao’s talk on 1 January at a function arranged by the Chemical Research Society of India (CRSI) in Bangalore at the Indian Institute of Science. CRSI functions mainly to popularize chemistry, reward achievers and to promote academia–industry partnerships. It also interacts with other international

societies and brings out publications in the form of newsletters, books and the journal *Chemistry – An Asian Journal*, which is owned by the Asian Chemical Editorial Society, a conglomeration of 12 chemical societies<sup>3</sup>. The society conducts a national symposium in February and a mid-year meeting annually (<http://crsi.org.in/>). CRSI has planned four zonal meetings in 2011 – at the National Chemical Laboratory in May, North Bengal University in July, University of Jammu in September, and Pondicherry University in December. The 12 regional chapters of CRSI will also conduct workshops, meetings and lectures during the year<sup>4</sup>. CRSI will also recognize chemistry teachers as part of the celebration<sup>5</sup>.

There are other such organizations across the globe including the Egyptian Chemical Society, Chemical Society of Japan, Royal Society of Chemistry, European Association for Chemical and Molecular Sciences, etc. The world’s largest scientific society, the American Chemical Society (ACS) was founded in 1876 (<http://acswebcontent.acs.org/landmarks/landmarks/draper/index.html>). It caters primarily to the requirements of chemistry researchers in the US ([http://pubs.acs.org/cen/coverstory/89/890\\_1cover.html](http://pubs.acs.org/cen/coverstory/89/890_1cover.html)). The major activities of ACS are publications, education and public outreach. The first journal published from ACS was the *Journal of the American Chemical Society*, started three years after the establishment of ACS. It now publishes 38 journals in sub-fields such as applied chemistry and chemical engineering; medicinal chemistry; organic chemistry; physical, inorganic and analytical chemistry; biochemistry, biotechnology, biochemistry and biomedical sciences; and macromolecular chemistry. The ACS newsletter *Chemical & Engineering News* is widely read. While most of the activities of IYC kicked off in January this year, ACS began its efforts in July last year by bringing out a monthly newsletter, *IYC Bulletin*.

Chemistry is the central science that has contributed to agriculture, medicine and energy. It paved way for molecular biology with the discovery of alpha-helical structure by Linus Pauling. Rao notes, ‘chemistry is the queen and servant of biology as well as of materials science’. How chemistry has influenced other sciences is also clear from the 2009 Chemistry Nobel to Venkatraman Ramakrishnan, Thomas A. Steitz and Ada E. Yonath, ‘for studies of the structure and function of the ribosome’ ([http://nobel-prize.org/nobel\\_prizes/chemistry/laureates/2009/](http://nobel-prize.org/nobel_prizes/chemistry/laureates/2009/)).

To celebrate IYC, activities organized by these societies are under way in different forms. Celebrations are also evident in the form of special publications being brought out by various journals, and editorials being dedicated to the issues afflicting chemical science. An editorial in *Current Science*<sup>6</sup> notes, ‘Pauling’s example of viewing the discipline in its broadest sense has never been followed in the development of chemistry teaching and research in India’. The editorial<sup>1</sup> in *Nature Chemistry* notes, ‘Chemistry generally has a bad press and is often misunderstood in the mainstream media’. Another issue, as the *Nature* editorial<sup>2</sup> puts it, is ‘Chemistry’s understated majesty’ but it will be agreed upon that ‘when chemistry is good, it is very, very good. It deserves its celebration’<sup>2</sup>.

1. *Nature Chem.*, 2011, **3**, 1.
2. *Nature*, 2011, **469**, 5.
3. Johnson, B., *Chemistry – An Asian Journal*, 2011, **6**(1), 4–7.
4. Krishnan, V., *Pers. Commun.*, 2 February 2011.
5. *CRSI Newsletter*, 2010, **11**(1).
6. Balam, P., *Curr. Sci.*, 2011, **100**, 5–6.

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However, at the turn of the XIX and XX centuries. his scientific interests changed: together with his wife, a graduate of the University of Paris, Maria Skłodowska Curie (1867-1934), he began to clarify the nature of uranium radiation and study radioactivity. The Curie spouses dedicated the best years of their lives to selfless work in the name of science - in the absence of the necessary funds, in a poorly equipped laboratory, they discovered and isolated two new chemical elements. Pierre Curie found that radium salts spontaneously give off heat. For Mother's Day, we celebrate Ada Lovelace, Ellen Richards, Henrietta Leavitt, Marie Curie, and Florence Nightingale -- the Mothers of Science. You've probably heard of Marie Curie, arguably the most famous woman in the history of modern science. Marie Skłodowska Curie (1867-1934) was a Polish-French physicist and chemist whose research on radioactivity (a term that she coined) contributed to a fundamental shift in scientific understanding. She is the first woman to win a Nobel Prize, the first person (and only woman) to win twice, and the only person of either gender to win twice in multiple sciences (!!). She developed the theory of radioactivity, as well as techniques for isolating radioactive isotopes, and she discovered two Celebrating Mother's Day. One of the 12 (GOOD) ways to celebrate Mother's Day is to give your mom the day off. Let her take it easy and relax while all the other members of the family 13 (DO) the work. Many families begin Mother's Day with breakfast in bed. Dad and the kids think that it. 14 (BE) the most pleasant and healthy way to let mom sleep late as they go to the kitchen and prepare her favorite meal. It can consist of anything your mom 15 (LIKE). After the food 16 (COOK) , try to do your best to arrange everything nicely on the tray. Don't forget the vase with the single flower.