Editorial

N Sathyamurthy, Chief Editor

Organic chemistry has always fascinated me. At the outset, it looks like just a collection of reactions, reagents and conditions. Hence, initially, I used to think that organic chemistry meant refluxing the reactants until the products materialised. While some reactions took place readily in the lab, those that were incomplete called for refluxing for a longer period. As a student, I remember being intrigued by some reactions occurring under sunlight. Heat or light seemed to do the trick in such cases.

There were so many named reactions and rearrangements one had to learn during the organic chemistry courses. I remember a fellow student who was admired by his classmates. They would describe him as walking Finar and told me in hushed tones that he had mastered I L Finar's, *Organic Chemistry*, Vol.1 and that he was working on Vol.2.

As I moved to higher classes in organic chemistry, I became fascinated with physical organic chemistry. The emphasis here was on the reaction mechanism. Physical organic chemists seemed to know how the reactions occur at the molecular level, even though they could never 'see' any of those reactions. Changing the solvent, its polarity and other conditions on the rate of a reaction seemed to give them clues on the molecular level interactions. The mechanism labels (S_N1 , S_N2 , etc.) were even more fascinating.

Gilbert Stork was one of the masters of this trade. An expert in reaction mechanism, he brought art into organic synthesis. The article on Stork by Dr Vijay Nair in this issue brings out the man and his mastery of the subject. Stork enamine reaction took the organic world by storm. He showed how radical reactions could be controlled. His mastery lay in regiospecific, stereospecific and enantiospecific syntheses. Stork showed that organic synthesis

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remained relevant over the years, and he believed that it would continue to remain relevant.

What is special in the evolution of organic synthesis is the chemist's ability to mimic nature in the form of biosynthesis and extend its applications to various disciplines. For example, what has been learned in organic chemistry has proved valuable in protein science. Purnananda Guptasarma describes the work of Frances Arnold, George P Smith and Gregory P Winter in protein engineering that got them the coveted Nobel Prize in Chemistry for the year 2018. What is interesting is that the 2018 Nobel Prize in Physiology and Medicine is also closely related to the work in chemistry and has been covered in this issue by Arunika Mukhopadhyaya. The write up on Nobel Prize in Physics by Debabrata Goswami describes the ability of lasers to 'trap' biological cells and study processes at the molecular level in situ, without destroying the cells. These developments clearly indicate how meaningless it is to distinguish between chemistry and biology at the molecular level. Physics, on the other hand, provides the necessary tools to understand these processes at the molecular level and manipulate them. Clearly, science in its true sense knows no borders.

The December issue also carries an introduction to the techniques of interferometry and lunar occultation in radio astronomy by Padmanabh Sarpotdar, while Arnab Ray describes the approach of second quantization and Majorana modes. In another interesting article, Shobha Bagai elaborates on the application of balanced number system to solve mathematical puzzles.

Before closing the Editorial of the last issue of *Resonance* for the year 2018, I wish to place on record my appreciation to the contributors and reviewers of the journal. The readers would have noticed a significant increase in the biology content in *Resonance*, thanks to the sustained efforts of some of the editorial board members. Maintaining a balance among different subjects is not easy, and the editorial team has been striving to do its best.

The year has also seen the launch of an online submission and

review system for *Resonance* – RevView Central. It is hoped that with the tool now available, the efficiency of handling manuscripts will enhance in the coming year.

Ultimately, what is important to any journal is the quality of submitted articles which in turn depends on the scientific community. We hope that more colleagues will come forward and submit more and more quality articles that interest the readers of *Resonance*.

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