# Editorial

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There is no other prize in the world that evokes the kind of inspiration, awe and respect as the Nobel Prize does. It is the best known and most coveted prize. Not only the elite or well-informed class, but even those who are not particularly interested in it are aware of it, because all news media report about it. People all over the world get to know the awardees who are honoured for having made extraordinary achievements and contributed greatly to the benefit of mankind through their work in the fields of Physiology or Medicine, Physics, Chemistry, Literature, Peace, and now, Economics. For a person receiving the Nobel Prize, it is like getting the stamp of excellence in his/her chosen area. Scientists, writers, educationists, social activists, media persons and several others, including general knowledge buffs all over the world, eagerly await the first week of October (the month Nobel was born), every year, for news of the awards from the Nobel Committee in Stockholm. A magical aura surrounds these prizes. The institution of these awards was the culmination of the inventive power and entrepreneurial acumen of Alfred Nobel who, through his explosives business, made a great fortune almost single-handedly, and earned the distinction of being the richest man, finally bequeathed most of his wealth to the awards.

How the Nobel Prize can inspire the young is very succinctly put across by Nobel Laureate Roald Hoffmann, "By recognizing excellence, the Nobel Prize evokes aspiration. Especially for young people... . The aspirations may be naive, but they are good... . When they wend their way to the Nobel Exhibit (in New York Hall of Science) ... they see hints of good science that led some of the best scientists to Stockholm ... a way to turn the celebration of what human hands can do into ... . It is an incentive for young people to do more than what they even dreamed they could do". [*Angew. Chem.* Int. Ed. Vol. 51, No.8, pp.1734–35, 2012].

Nobel Prizes have attracted criticism and controversies. Einstein, who himself was a recipient of the award remarked, "Alfred Nobel invented an explosive more powerful than any then known – an exceedingly effective means of destruction. To atone for this 'accomplishment' and to relieve his conscience, he instituted his award for the promotion of peace". This observation is perhaps a bit uncharitable, if one considers Nobel's unfavourable attitude towards wars and his compassionate traits.

Nobel Prizes have sometimes given room for controversies also by omissions of highly deserving candidates as well as commissions, particularly in the case of Peace and Literature Prizes. All said and done, the Nobel Prize is a celebration of excellence and extraordinary achievements. Alfred Nobel, who created them, was himself a man of excellence and extraordinary achievements.

Starting from 1901 until the end of 2012, a total of 555 Nobel Prizes had been awarded to 839 people and 24 organizations (Peace Prize) of which only 43 women have taken 44 prizes (Marie Curie had two). *Resonance*, right from its inception in 1996, has been publishing articles every year about Nobel Prize winning work in the Sciences. Every issue of *Resonance* also features a scientist and until the last issue (May, 2013), 209 scientists have been covered. In this issue, *Resonance* pays tribute to Alfred Nobel, a chemist and a chemical engineer, with a short biographical sketch, and three articles by experts on the work that led to the 2012 Nobel Prizes in Physiology or Medicine, Physics and Chemistry, titled 'Cellular Reprogramming – Turning the Clock Back', 'Manipulation at the single-particle quantum level' and 'A serpentine way to signaling', respectively.

This issue also contains an interview with Jayant Baliga in the 'Face-to-Face' Section. It is a happy coincidence that we are able to bring Baliga and Nobel together in the same issue as they have several common characteristics. Both are great inventors. Baliga is a remarkably successful electronics engineer as was Nobel as a chemical engineer. Nobel's work (dynamite) brought about a kind of revolution in the development of infrastructure in transportation system, which speeded up the movement of men and material. Baliga's IGBT, microprocessors, super linear MOSFET, TMBS rectifier, BFOM and several others have brought about great change in communication and transport systems. IGBTs are used in motor controls, heaters, ignition control systems of cars, inverters, air conditioners, compact fluorescent lamps, etc. Use of IGBT has brought about huge savings in energy consumption and as a consequence, enormous reduction in carbon dioxide emission. All this has greatly impacted every aspect of our life. Baliga is not just an inventor; he is an entrepreneur, an educationist and a great researcher. His research is goal oriented and he has many patents, more than 500 publications and 18 books. In his opinion, "Patents are of little value unless you transform them into products", and "There is no use having the physics if you can't build the structure that makes the physics work". Baliga received, apart from many other awards, the National Medal of Technology and Innovation, the highest honour given to an engineer in the US, from President Obama. Brought up and educated in Bangalore and in IIT, Madras, the success story of Jayant Baliga, a giant in electronics, is truly inspiring to the aspiring scientists and engineers.