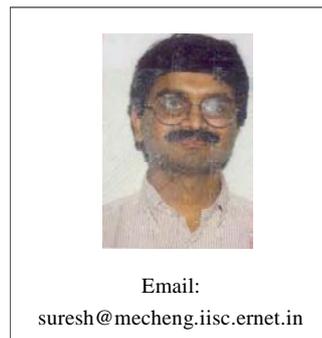


# Editorial

---

***G K Ananthasuresh, Editor***

Science and engineering are inextricably tied to each other. It may surprise some of us to know that Leonard Euler, one of the greatest mathematicians humankind has ever produced, was involved in ship design and other engineering endeavours. Some of the instruments that James Clerk Maxwell built for his research laid the foundations for optimal structural design and precision instruments. Jagadish Chandra Bose meticulously designed mechanisms to measure plant-growth. Lord Kelvin (William Thomson) was fond of machinery. He was 'never content until he constructed a mechanical model of something' he was trying to understand. C V Raman too built his instruments; in particular, it is reported that he built the first mechanically playable violin using 'lab-junk and parts bought from a cycle-shop'. Richard Feynman, in his childhood, loved to 'fix radios by thinking'. During the late years of his life, Feynman investigated the mechanical failure in the space shuttle Challenger. There are many more examples of great scientists involved in engineering. Likewise, there are great engineers who took interest in science and contributed to it. Among them, Alexandre Gustave Eiffel stands out as tall as the famous tower his company designed and built in 1889. In this issue, we read about Eiffel's versatility as an engineer and as a scientist.



It may appear that the pursuit of engineering or science has different goals. But it was not so in the past when many laws of physics and chemistry were formulated. As Herbert Simon put it, science is concerned with things *as they are* and engineering is concerned with things *as they ought to be*. For a thinking individual who is interested in understanding something or in solving a problem at hand, this distinction is unnecessary. But science and engineering have evolved differently to the extent that today we see them as two separate entities. Fortunately, the barriers between science and engineering are now gradually disappearing at the cutting edge of research. Fine arts and humanities too need not be left behind in this integrative process. Eiffel, as we will see in this issue, successfully merged engineering, science, business, and even art.