

Editorial

K L Sebastian, Chief Editor

This issue of *Resonance* covers the life and work of Henry Eyring. Eyring was a very unique scientist – though trained as a mining engineer he shifted to pure chemistry and used quantum physics and statistical mechanics very successfully to understand chemical phenomena. One of his greatest contributions was the ‘Activated Complex Theory’ for the calculation of rate constants



Email: kls@ipc.iisc.ernet.in

of chemical reactions. The theory has been very useful in the description of the dynamics of chemical reactions. Also known as the Transition State Theory (TST), it is very well understood at a classical mechanical level and has found applications even in areas outside chemistry. However there are problems that remain. Classical mechanics is not the best description for the dynamics of reacting molecules, and one needs to use quantum mechanics. A proper quantum version of TST has been very much sought after for several decades and only in the very recent past has there been considerable progress. The work of Eyring was very important and undoubtedly deserved the Nobel Prize, which surprisingly was never given. Two reasons have been suggested for this. The first was that the members of the Nobel Committee did not understand his work well enough. The second was his religion – the fact that he was a Mormon. I suspect that the first cannot be the reason, as the concept of activated complex is something a chemist can easily understand. So the actual reason may be the second, or perhaps that some of the work that Eyring did in the theory of liquids was controversial and had brought down his reputation.

Like all good things, the series on the history of science written by T Padmanabhan has come to an end. It was one of the most readable among the several series *Resonance* has published, and I thank the author for writing it.

This issue has several interesting articles. Siddharth writes on the efficiency of different methods for detecting errors in numeric codes while Garge and Shirali describe the triangular numbers – these numbers were known to the Greeks and have interesting properties. V V Raman continues the *Darshana* Jolts and describes nuclear decay, its importance and applications.

I am happy to note that several of the contributors to this issue are students, pursuing their doctoral degrees. The way many of our students write makes me happy. In fact submissions by some of the students are among the best that *Resonance* receives.

