Editorial

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This issue of *Resonance* focuses on the life and work of Peter Debye who made remarkable contributions to the area of physical chemistry, for which he was awarded the Nobel Prize in Chemistry for the year 1936. It is interesting to note that he was originally trained in theoretical physics, and obtained his PhD under the supervision of the famous physicist Arnold Sommerfeld. Later in his career, while holding the position as a theoretical physicist, Debye also gave laboratory courses in experimental physics! This must have helped him later as he did experiments that were related to his theoretical studies, particularly in connection with dipole moments. This should actually serve as an example for the young scientists of today, who in this age of super-specialisation, often seem to confine themselves to their own narrow areas, and refuse to venture out and explore related fields. Debye made important contributions to a large number of topics, like the effect of temperature on scattering of X-rays from a crystal, theory of ionic solutions, heat capacity of solids, etc. His name is associated with many important contributions: the Debye–Hückel equation for ionic activity, the Debye–Hückel–Onsager equation for conductivity of a strong electrolyte, and the Debye model for heat capacity of a monoatomic solid, to cite a few. The life and contributions of Debye is covered in two articles, one by Arunan and the other by Shukla and Prem Kumar.

Jacques Lucien Monod was one of the founders of molecular biology whose birth centenary is being celebrated this year. Jayaraman, in his article, traces the history of the concept of operons, proposed by Jacob and Monod fifty years ago, based on their classic genetic studies in bacteria.

It is very common to have birds, insects, and fish move in nice patterns, a phenomenon referred to as 'flocking'. The surprising thing is that each member of the flock feels the influence only of its immediate neighbours which can be described as attractive and repulsive, terms that are quite commonly used in describing molecular interactions. The formation and dynamics of flocks is a very important and emerging area. The article by Kishore Dutta gives a gentle introduction to this exciting area of research.

V V Raman continues his *Darshana* Jolts, and touches upon insights into uniform motion and acceleration, gravitation, height and weight of our atmosphere, and a variety of other topics, which include wave–particle duality.