

## FOREWORD

This fifth meeting of this series tackled a broad topic in a deliberate attempt to bring together the sciences which are bound to interact in the 21<sup>st</sup> Century – the established science of physical chemistry and materials with the emerging sciences of molecular biology and cellular organisation. Not only were we attempting a multicultural exchange but also stretching scientists to compare and contrast the approaches and language of these widely separated disciplines.

We sought the similarities, where each branch of the sciences could share with another; the novel control of materials and molecules that the new biology can offer to the physical scientist; and the need for learning new insights from the highly specialised structure of molecules and architecture that biology has evolved.

All of these sciences need new measurement techniques examining dynamics, in real time and non invasively where physicists and biologists already converse and our capabilities have grown immeasurably in recent years.

The object of this unusual event was to open minds and challenge each other about how and why we approach our science in the way we do, and most of all, the change. Such a wide ranging meeting is not intellectually “comfortable”, but only then do anomalies emerge and discontinuities become identified. With any luck, this is when innovative approaches are stimulated and new fields of research are conceived.

Thus, we ranged from the systematic design of peptides to elucidate the rules of protein assembly, through the flow induced assembly of colloidal particles to self assembly of hair and skin cells. We saw the elegance of detail we can now detect in crystals, the real organisation of molecules at interfaces, the flow of nutrients in living plants and the power of the modern electron microscope.

What we also learnt was that science is genuinely international in its level of quality. There were many exchanges not only at the sophisticated level of one expert with another, but also at a rudimentary level where the basic inquisitiveness of scientists is exposed when faced with problems they have never previously encountered. For me, it was the latter that showed the experiment was working.

Certainly the conference was a success, if the requests for more are anything to go by. Whether we stimulated breakthroughs in inventive thought only time will tell, but I am sure that I was not the only attendee who travelled home with new insights into how and where new science could be generated and the absolute certainty that its development into technology in the Indian sub Continent will be different and surprising to those of us from the West.

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