REPORT ON DAE-BRNS 5th INTERDISCIPLINARY SYMPOSIUM ON MATERIALS CHEMISTRY (ISMC – 2014)

The DAE-BRNS 5th Interdisciplinary Symposium on Materials Chemistry (ISMC-2014), organized by Chemistry Division and Society for Materials Chemistry, was held at BARC during 9-13 December, 2014. The symposium was inaugurated by Dr. S. Basu, Director, BARC. He also inaugurated exhibition cum demonstration experiments section of the symposium. There was an overwhelming response from participants from India and abroad. There were 38 invited talks and 360 contributed papers covering frontline research in diverse areas of material science such as nuclear materials, nanomaterials, thin films, devices and sensors, materials for energy conversion and storage, biomaterials, magnetic materials, catalysts, soft matter, carbon based materials, high purity materials, organic materials, computational materials chemistry and so on. The deliberations were focused on materials research program with an obvious bias towards the materials relevant to the DAE program. The development of newer technologies based on nanomaterials for the above applications e.g. in separation science and sensors was discussed at large. Prof. H. W. Roesky, University of Goettingen, Germany, in his lead lecture highlighted importance of material chemistry in emerging technologies. In particular, he emphasized on low valent silicon which is technical product for preparing silicon chips.

Speakers from India and abroad delivered invited talks on a variety of topics such as nanotechnology-driven cancer therapy, material chemistry issues in fast reactors, energy conversion, nuclear fuels, solar cells, functional materials, complex chemical hydrides for hydrogen storage, diamond thin films for sensors, magnetic interactions in molecular systems, nanomaterials for ambient ionization, bridged fluorescent molecules as chemical sensors, Colloidal quantum dots, boron neutron capture therapy, cluster based novel nanoscale materials, clinically useful metal oxides, semiconductor based flexible devices, for non-linear dielectric nano-crystals, high performance electrolytes for solid oxide electrochemical cells, advanced energy storage options for clean environment, nanomaterials for energy applications, thermochemical methods for hydrogen generation, and multi-components soft matter. In addition, there were 9 short presentations.

In a five-day long deliberations, 15 scientists from advanced countries like Germany, USA, Russia, and South Africa, and 23 scientists from our national research centres, IITs, BARC, IGCAR, NIIST, IISc, Mumbai University and DIAT, delivered the lectures on their recent work. 360 posters presentations, carried out in four consecutive days (9-12 December, 2014), were well attended by all the delegates with keen interest. Seven best posters were selected on each day for awards (90 posters per day) by the expert committee. Valedictory session on 13th December, 2014 was presided over by Dr. B.N. Jagatap, Director, Chemistry Group. Prof. J.B. Joshi, Homi Bhabha Chair Professor, was the chief guest of the valediction

function. Many students, invited speakers and other delegates gave their feedback the symposium. The event has been described by the delegates as a high standard, well organized and highly successful scientific symposium. The symposium was advertised by the Royal Society of Chemistry (RSC), UK on their webpage and RSC also sponsored two prizes for the poster prize winners. Further, RSC has agreed to publish papers presented by the invited speaker in the Journal of Materials Chemistry after peer review.

The deliberations and interactions among the delegates during ISMC-2014 are likely to culminate in several new BRNS projects as desired by various non-DAE delegates. A large participation of Non-DAE delegates (about 275) in ISMC-2014 across different Indian states also indirectly served the purpose of out-reach.

From Left to Right: Drs. R.K. Vatsa, S.K. Sarkar, S. Basu, B.N. Jagatap and V.K. Jain