

A one day workshop on Odisha's gemstones was organized at CSIR-IMMT, Bhubaneswar on **23<sup>rd</sup> February, 2015**, in association with Directorate of Geology, Govt. of Odisha and Indian Institute of Minerals Engineers (IIME), Bhubaneswar Chapter. Experts, scientists, academicians, students and gem lovers drawn from within and outside Odisha participated in the workshop and deliberated on various issues of gemstones concerning occurrence, mining, policy of Govt. of Odisha, entrepreneurship, PPP mode of development, skill development of youth, advanced characterization and evaluation of raw and processed gemstones, aesthetic improvement of low grade gemstones through S&T inputs, marketability and value addition. In total there were 09 invited lectures, 07 poster presentations and a panel discussion culminating the concluding session. A laboratory visit was arranged to show around various advanced facilities of CSIR-IMMT, Bhubaneswar. Particular focus was laid on 3D imaging of gemstones (ruby, garnet, iolite) by X-ray tomography.

Shri Prafulla Kumar Mallik, Hon'ble Minister for Steel & Mines, Govt. of Odisha inaugurated the workshop as the Chief Guest. He highlighted on the aspect of the types of gemstones available in the state and touched upon the gemstone policy of the Government. He further urged to develop the gemstone industries in the state for generating more revenue and employment to the people. Shri R.K Sharma, Secretary, Steel and Mines, Govt. of Odisha attended the workshop as the Guest of Honour. He briefly discussed the various problems currently faced by gemstone industries in the state. Prof. B. K. Mishra, Director, CSIR-IMMT and Chairman of the Organizing Committee welcomed the delegates and participants and requested them to attend all the transactions of the workshop. In his brief speech, Prof. Mishra drew the attention on the excellent characterization facilities available at CSIR-IMMT which can be successfully employed for the Odisha gemstone purpose. The gemmologists and experts who delivered the technical lectures in the workshop included Shri K. T. Ramachandran, Chief Gemmologists, Gemmological Institute of India (GII), Mumbai, Dr. M.D. Sastry, Head, R&D, GII, Mumbai, Shri Gagan Chaudhary, Dy Director, Gem Testing Laboratory (GTL), Jaipur, Shri A.T. Dash, Director of Geology, Govt. of Odisha, Dr. B. B. Nayak, Chief Scientist & Project Leader of CSIR Network Project on Gemstones, CSIR-IMMT, Bhubaneswar, Dr. B. K. Mohapatra, Ex-Chief Scientist, CSIR-IMMT, Shri K. D. Nath, Dy Director, Directorate of Geology, Govt. of Odisha, Dr. G. N. Pujari, Ex-Senior Geologist, Montepuez Ruby Mining LDA, Mozambique and Shri P. Kar, Product Manager, Agilent Technologies India Pvt. Ltd. Various topics covered in the lectures encompassed subjects like coloured gemstones; gemstones of Odisha; fracture filling in emerald; western Odisha gemstones, treatments and advanced characterizations; identification, characterization of gemstones and gem lab facilities of Govt. of Odisha; Alexandrite gemstone of Odisha; surface diffusion in ruby and sapphire; gemstone mining in Mozambique and LA-ICPMS analysis of gemstone. The poster papers presented in the workshop covered areas like conventional heat treatment, laser heat treatment, microwave heat treatment, sonication and heat treatment, ellipsometry and X-ray micro computed tomography (3D imaging by NDT) of Odisha gemstones (ruby, iolite, garnet) and their microstructural and chemical characterizations. The Directorate of Geology, Govt. of Odisha presented an exhibition comprising various Odisha gemstone samples and their scope of preliminary characterization available in the gem lab of the directorate.

At the end, a panel discussion on the Gemstone policy and entrepreneurship development was held to take stock of various important issues and problems (illegal mining, security issues, PPP, licensing policy, skill development of school children in tribal areas, etc.) faced by gemstone industry and entrepreneurs in the state of Odisha. The panelists included Prof. B. K. Mishra, Director, CSIR-IMMT, Shri K. T. Ramachandran, Chief Gemmologists, Gemmological Institute of India (GII), Mumbai, Shri A.T. Dash, Director of Geology, Govt. of Odisha, Shri Gagan Chaudhary, Dy Director, Gem Testing Laboratory (GTL), Jaipur and Shri B. M. Davda, CMD, Tara International, Mumbai. From the audience, Shri B. N. Majhi of Mayurbhanj Surakhya Manch, Bhubaneswar, Ms. Nirupama Dash of OMC, Bhubaneswar, NGO member from Bhawanipatna and Dr. B. B. Nayak of CSIR-IMMT, Dr. subhransu Mishra and Mr. P.K. Acharaya and many others participated in the discussion. Out of the above panel discussion two important points emerged: (i) Govt. policy related issues concerning mining, security, lease, trade and skill development of local people (ii) Advanced S&T input for aesthetic improvement of gemstones, value addition and marketability. All the speakers emphasized the need for joint effort by the CSIR-IMMT, Bhubaneswar and the Govt. of Odisha towards full exploitation of the gemstone potential of the state. While the Govt. of Odisha is adequately equipped by Directorate of Geology and Mining to handle exploration, prospecting and leasing of gemstones, the CSIR-IMMT, being a mineral and materials based R&D institution, on the other hand, has its strength in the characterization and evaluation of gemstones. The Govt. of Odisha and CSIR-IMMT were urged to go for collaborative effort for tapping the strength of each partner in the greater interest of the state as well as the country.