



International Conference on Nanoscience and Nanotechnology

“Aligarh Nano-IV International 2014”

March 8-10, 2014



Lt. Gen Zameer Uddin Shah
Vice Chancellor, A.M.U., Aligarh



Prof. Ashok K. Ganguli
Director, INST, Mohali



Brig. Syed Ahmad Ali
Pro-Vice-Chancellor, AMU



Dr. Sultana N Nahar
OSU, USA

A three days International conference entitled “Aligarh Nano-IV International 2014” in the cutting edge area of Nanoscience and Nanotechnology was organised by the Centre of Excellence Materials Science (Nanomaterials), Department of Applied Physics, AMU, Aligarh, India jointly with Ohio State University, USA and CSIR-CEERI, Pilani, India. The Centre has been organizing National Conference every year since 2010 on a theme relevant to the Nanoscience and Nanotechnology. In





this series, International Conference on Nanoscience and Nanotechnology “Aligarh Nano-IV International 2014” was organized in a befitting manner at Aligarh Muslim University, Aligarh from 8 to 10 March, 2014. The focus of the conference was on "Nanoscience and Nanotechnology" with eleven technical sessions, which covered topics relevant to the pursuit of atomic and molecular level control of nanoparticles and nanomaterials belonging to the important interdisciplinary fields viz. (1) Nanotechnology for defence & military applications, (2) Synthesis and characterization techniques of nanomaterials, (3) Nanotechnology for harnessing energy, (4) Nanomaterials in food, agriculture and water purification, (5) Nanoparticles for engineering materials, (6) Magnetic nanoparticles and applications (7) Nanoparticles based drug targeting, (8) Nanomedicine and health care, (9) Nanoelectronics, nanosensors and MEMS, (10) Bionanotechnology, (11) Nanocosmetics and house hold products, (12) Graphene and its nanocomposites and (13) Organic and inorganic nanocomposites. The conference was generously supported by DRDO (Delhi) and Shri Avinash Chander, Secretary Defence R & D, DG, DRDO; India was to join the inauguration of the conference but had to cancel due to urgent meeting. Dr. Dilshad Akhtar, Director, ER&IPR (DRDO) and Dr Rajeev Varshney, SO to SA to RM, (DRDO), Mr. DBS Sethi, Additional Director, TCG/Materials (DRDO), Dr. S.R. Vadera, Director, DLJ (DRDO) and Dr. Mohammed Nasim, Director, DIBER (DRDO) visited the Nanotechnology centre and applauded the efforts of the group and promised future collaboration and support from DRDO, India.

The conference commenced in the Kennedy Auditorium on 8 March, 2014 at 9.0 am with the recitation from the Holy Quran and then welcome address by Prof. Alim Naqvi, convener of the conference, subsequently followed by the addresses of the Prof. Arif Suhail, Dean Faculty of Engineering & Technology, Brig. (Retd.) Syed Ahmad Ali, Pro-Vice Chancellor, Prof. Ashok Kumar Ganguli, Director, Institute of Nanoscience and Nanotechnology, Mohali, Punjab; Prof. Vikram

Kumar Fromer Director, NPL; Prof. Jamil Akhtar, CEERI, Pilani; Dr. Sultana Nahar, OSU USA and Prof. Anil Pradhan, OSU, USA and finally Lt. Gen. (Retd.) Zameer Uddin Shah, Vice Chancellor of AMU. The Vice Chancellor, AMU who presided over the inaugural function pointed in his presidential address that we should not and cannot miss the nanotechnology revolution as we have missed the industrial revolution, and that he was committed to support nanotechnology program and would like to see it grow by leaps and bounds in AMU.



Prof. Jamil Akhtar
CSIR-CEERI, Pilani



Prof. Vikram Kumar
Emeritus Professor IIT, Delhi



Dr. Shakeel Khan
Chairman, Dept of Applied Physics, AMU



Prof. Rahimullah Khan presenting Memento to Dr. Sultana Nahar

The Pro- Vice Chancellor explained in depth the importance and future prospects of the Nanotechnology in the 21st century. The message from Nobel Laureate Prof. Ahmad Zuwail who could not come to “Aligarh Nano-IV International 2014” was read by Dr. Sultana Nahar, OSU, USA. The Key Note address was delivered by Prof. M. Ishaque Khan, Illinois Institute of Technology, Chicago and he talked about the recent advances in the interdisciplinary fields of Nanotechnology. The conference Souvenir/ Abstract Book of “Aligarh Nano-IV International 2014” was released by His Excellency, Vice Chancellor of AMU. The Pro Vice Chancellor, Mr. Ahmad Ali other dignitaries Prof. Lotfia Elnadi & Prof. Mona Bakr, Cairo University, Egypt. Mr. Christopher Carey, Director– Global Gateways, Office of International Affairs, OSU, USA, explained the STEM-ER Project future prospects and expressed the remarks about AMU Nanotechnology program. Prof. Lotfia Elnadi, on behalf of her group presented a golden shield to Prof. Alim Naqvi for outstanding contribution of his group in the field of Nanoscience and Nanotechnology. The inaugural session concluded with the vote

of thanks by Dr. Shakeel Khan, Chairman & Convenor, who thanked one and all by name for the respective part played by them. The high tea was arranged in the lawn of Kennedy Auditorium for all the guest and delegates.



Mr. DBS Sethi
Director TCG/Materials, DRDO, New Delhi



Dr. Mohd Nasim
DIBER, DRDO, Haldawani



Dr. Suwarna Datar
DIAT, DRDO, Pune



Dr. S.R. Vadera
Director, DLJ, DRDO,

The 11 technical sessions were organized in the auditorium of Department of Physics, which were delivered by the eminent invited speakers selected from several interdisciplinary areas of Nanoscience and Nanotechnology from India and abroad. The first technical session started at 11.45 am on 8 March, and keynote lecture was delivered by Prof. M. Bououdina, Director, Nanotechnology Centre, University of Bahrain. Prof. Bououdina talked on the potential of the nanomaterials for the hydrogen storage. An interesting talk was delivered by Prof. Lotfia Elnadi, Cairo University, Egypt, who spoke on Silicon nano-crystalites prepared by nanosecond laser ablation of Si wafers in water and Prof. Anil Pradhan, OSU-USA, spoke on X-ray Irradiation of heavy element high-z nanostructures for cancer theranostics. Dr. S.R. Vadera, Director, DLJ, DRDO, India, spoke on tuning of fluorescence nanomaterials using doping of the transition metals, Dr. D. Das, University of Hyderabad, on chemical mechanical planarization (cmp) - a novel nanotechnology to produce



Prof. M. Ishaque Khan
Illinois Institute of Technology, USA



Prof. Anil Pradhan
OSU, USA



Prof. Elnadi presenting shield to Prof. Alim Naqvi



PVC, AMU with the memento

nanostructured surfaces and Dr. Mukesh Sinha, DRDO, Kanpur, India on Development and characterization of electrospun nano fibrous coated webs for defence textiles applications. Some of the invited talks were focused on Agriculture Nanotechnology, and one of these was delivered by Prof. J.C. Tarafdar, CAZRI, Jodhpur, India. He talked about the Nanoparticle production by biological mode and its application in agriculture, Dr. Sandhy Mishra, BHU, Varanai, India spoke about the “*Deciphering biocontrol potential of silver nanoparticles synthesized by agriculturally important microbes*”. Prof. Mona Bakr , Cairo University, Egypt delivered the invited talk on “*Photothermal and photoelectric ultrafast response of novel graphene hybrid nanocomposites: new materials for electronics, solar cell, water desalination and purification*”, Prof. Kholmurad Khasanov, MVLMS University, Russia spoken on “*The electromagnetic super- compressibility and synthesis of nano materials*”, Prof. Kamrul Alam Khan, Jagannath University, Bangladesh, on Studies on electrochemistry for *Pathor Kuchi Leaf* (Bryophyllum) electricity generation system, Prof. PMG Nambissan, SINP, Kolkata, India on “*Review of positron annihilation studies in multiferroic nanocrystalline compound*”, Dr. Ran Vir Singh, IVRI, U.P. India, on Evaluation of vermicompost quality of three garbage processing earthworm species using nanotechnology etc. Last two sessions were devoted for the oral presentations on March, 10, 2014 and which were done by the young/ senior scientists, researchers and students. The two poster sessions on 8 and 9 March were organized in the evening and evaluated by the panel of eminent faculties. The conference sessions were chaired by the eminent academician and scientist from India and abroad viz. Prof. Sultana Nahar, OSU, USA, Prof.

Lutfia Elnadi, Egypt, Prof. H. B. Singh, BHU, Prof. P.Q. Rizvi, AMU, Prof. Rahimullah Khan, AMU, Dr. Iqbal Ahmad, IITR, Lucknow, Prof. Wasi Haider, AMU, Mr. D.B.S. Sethi, Additional Director TCG/Materials, DRDO, India, Dr. Mohammed Nasim, Director, Defence Institute of Bio-Energy Research (DIBER) Haldwani, India, Prof. (Retd.) R. Prasad, AMU, Aligarh and Prof. (Retd.) R.J. Singh, AMU, Aligarh. A grand musical evening was organized on 9 March at 9.30 pm in the Department of Physics auditorium in which Mr. Johny Foster, the legendary ghazal singer and Urdu Poet from Aligarh Muslim University gave an excellent performance.

Most of the conference delegates visited the AMU Nanotechnology centre, where scientists of the centre Dr. Wasi Khan, Dr. Braj Raj Singh and Dr. S. Asad Ali explained the various novel ongoing research activities. Notable among the visitors were Prof. Vikram Kumar, Dr. Sultana Nahar, Prof. Anil Pradhan, Prof. Ford Lumban Gaol, Prof. Mona Bakr, Prof. Lutfia Elnadi, Dr. Mohd. Nasim, Prof. H.B. Singh, Mr. D.B.S. Sethi, Prof. Kholmurad Khasanov, Prof. Kamrul Alam Khan, Dr. S.R. Vadera, Dr. Ran Vir Singh and Dr. Sunil Kumar Singh etc. and all other delegates appreciated and applauded the useful technology and products developed in the Nanotechnology centre.



Inaugural Function
Kennedy Hall Auditorium, AMU

The conference continued till at 8.30 pm on 10 March and the valedictory function was held on 9.00 pm under the Chairmanship of Prof. Mohibullah, Dean Faculty of Engineering & Technology. Prof. Mohibullah stressed the need to strengthen the AMU Nanotechnology Program.



Prof Anil Pradhan presenting memento to Dr. Shakeel Khan



Prof. Mohibullah presenting Memento to Prof. Lotfia Elnadi



Prof. P.Q. Rizvi presenting Memento to Dr. Wasi Khan



Prof. M. Bououdina presenting memento to Dr. Braj Raj Singh

Prof. Alim H. Naqvi convenor of the Aligarh Nano-IV International 2014 and Principal Coordinator, AMU Nanotechnology program extended warm welcome to the delegates and summarized the progress/achievements of the conference and AMU Nanotechnology program. Prof. Naqvi on behalf of organizing committee thanked Vice-Chancellor and Pro-Vice Chancellor, AMU Aligarh for their presence in inaugural function and all kind of support to the organization of Conference. Special thanks and greetings were given to the eminent delegates from India and abroad and organizing team for effectively coordinating there by making the conference a grand success. The best posters (F. Mohmed, B.S. Abdur Rahman, University, Chennai; Mr. Irshad Bhat, AMU, Aligarh) and oral lectures (Ms. Manju Arora, NPL Delhi; Ms. Nasreen Ahmad, AMU, Aligarh) prizes were distributed to winners by Prof. Mohibullah, Dean Faculty of Engineering & Technology, AMU.

It is heartening that collaborations from OSU (USA) University of Bahrain, Cairo University, Egypt Moscow University, Russia, BINUS, University, Indonesia, BHU, Varanasi, IVRI, Bareilly, MNNIT, Allahabad and University of Hyderabad have been offered. The final remarks were made by the eminent invited speakers/ delegates and vote of thanks was given by Dr Shakeel Khan, Chairman, Department of Applied Physics and also Convenor of the conference.



Prof. Alim Naqvi with Prof. Kholmurad and his wife



Prof. Alim Naqvi presenting Memento to Dr. Sultana Nahar



Prof. K. Rama Reddy presenting Memento to Prof. Ford Gaol



Prof. Kamrul Alam Khan, Bangladesh



Prof. MonaBakr Egypt



USIF Lab



Prof. Mahavir Singh



Dr. Ashok Sharma



Ms. Nusrat Jahan, M.Tech (Nano)



Mr. Shakeb Ul Hasan, M.Tech (Nano)



Ms. Farheen, M.Tech (Nano)



Prof. P.M.G Nambissan



Visitors in USIF Lab



Session in Progress



Poster Presentations



University Tarana



National Anthem

ALIGARH NANO IV INTERNATIONAL 2014

Cultural Evening
March 9, 2014



Mr. Johnny Foster presenting
Aligarh Muslim University Tarana



Prof. Kholmurad Khasanov dancing on music



Prof. Lotfia Elnadi (R) with Prof. Kholmurad's wife
Mm. Zameera (Samarkand)



L to R: Dr. Shakeel Khan (AMU, Aligarh),
Prof. M. Bououdina (Bahrain), Mm. Zameera
(Samarkand), Prof. Kholmurad (Moscow)



L to R: Farheen, Rumman Zaidi, Nusrat
Jahan, Sana Riyaz



L to R: Sana Riyaz, Jitendra Bahadur, Ankul
Chauhan, Nadeem Firoz, Rahul, Prabhat
Kumar, Zafar Iqbal, Samim Hasan

Nanotechnology Students