



Conference Report

# NanoSET 2017

Impact of Nanoscience on Energy  
Technologies



DEPARTMENT OF PHYSICS  
COMSATS Institute of Information Technology Lahore

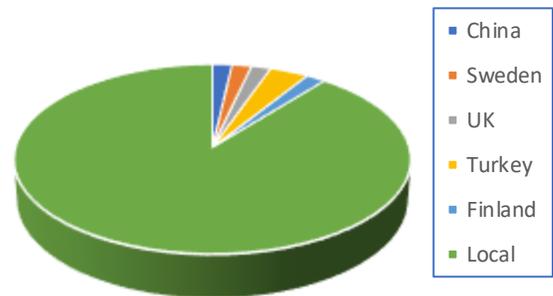
## Introduction

Three days International Conference “NanoSET 2017” from 25-27<sup>th</sup> October was organised at department of Physics, COMSATS Institute of Information Technology Lahore. It was 2<sup>nd</sup> conference of the series, the 1<sup>st</sup> one organised in 2014. The purpose of this conference was to gather scientific community related to nanoscience from all over the world. Researchers, engineers, academics as well as industrial professionals from diverse backgrounds have shared their thoughts for further development in nanoscience for energy technologies. The conference covered areas like Clean Energy, Solar, Hydro, Wind, Biomass, Fuel Cell, batteries, super-capacitors and energy utilization using state-of-the art Nano based economically sustainable technologies.

Renowned experts from almost all over the world have participated the conference and shared their views and expertise related to nanoscience and energy technologies. These experts from six countries e.g Sweden, China, UK, Turkey, USA and Finland have emphasised on the development of cheap solutions to the problems faced by industry in development of energy efficient devices. Along with them large number of local experts from prestigious institutes like GIKI, QAU, UET, NUST, LUMS, GCU, LCWU, BZU & CIIT have also shared their views and research on the field.

Conference Statistics	
No. of International Participants	07
No. of Local participants	250
Posters Presented	18
Research Papers/Talks	51
Invited Talks	21

## Country's Participation



*Group photo of Foreign Delegates and Participants with the Chief Guest*

## Inaugural Session

The conference has started with the recitation from Holy Quran following by opening remarks from **Dr. M. Ashfaq Ahmad**, who explained the objectives of the Conference and welcomed the honorable guests. He highlighted the research activities of Physics department on energy technologies. He also mentioned that CIIT Lahore has focused on joint research program with foreign collaboration to uplift the research culture in department and strengthen research Labs at CIIT Lahore.

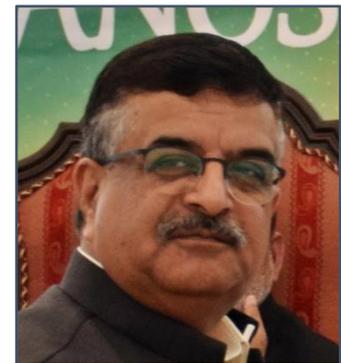
**Prof. Dr. M. Ahmad Farooqui**, Director CIIT Lahore addressed the participants in his key note address. He highlighted the role of science in development of a country's economy. He emphasized the scientists to focus on critical issues for cheap and reliable solutions. He also accentuated that development of technology is not beneficial unless it has linkages with industry for practical implementation.

**Prof. Dr. Bin Zhu**, from KTH, Sweden had noticeable remarks on technology development using Fuel Cell. He explained that how environment friendly is this technology and how advancement in this technology can overcome the energy crises in developing country. He also mentioned that, he feel delighted for being here again in NanoSET. Prof. Bin Zhu is the head of Advanced Fuel Cell and Solar Cell group, which is a part of the Heat and Power Division of Department of Energy Technology at KTH, Sweden.

**Mr. Sher Ali Khan**, Prov. Minister for Minerals & Mines was the chief Guest of the conference NanoSET 2017. He highlighted the issues facing by nation related to energy. He emphasized on the fact that scientific community can only bring sustainable solutions to one's country. He committed his full support for every initiative taken by scientists on resolution of energy problems. He also appreciated the efforts of Pakistani scientists for establishment of energy centres in Pakistan.



Dr. M. Ashfaq Ahmad (HoD)



Prof. Dr. M. Ahmad Farooqui  
(Director)



Prof. Dr. Bin Zhu  
(Sweden)



## Technical Sessions

The technical sessions of conference were started with the plenary talks of honourable speakers Prof. Sining Yun from china, who talked about dye-sensitized solar cell based on carbon materials followed by an invited talk by Prof. Neslihan Yuca from Turkey, who explained about porosity in lithium ion batteries. After the plenary talks, participants entertained with refreshment along with the poster session. Then parallel sessions 2 & 3 of interactive talks were started.



Technical sessions 4 & 5 were started after lunch break of day 2, in these sessions parallel talks were given at seminar room and room-A3 in Physics department. These sessions were chaired by Dr. Neslihan Yuca and Prof. Dr. Farman Ali Shah. In these sessions the focused areas were SOFC, PEM fuel cell, Polymer electrolyte membrane, Magnetic core-shell nanoparticles, Heat transfer in micro channels, Photocatalysts using ZnO, Dielectric properties variations with frequency, etc. Students have shown keen interest in these presentations and have an interactive Q&A session at the end.



The proceedings of the third day of NanoSET2017 was commenced at 9:00 am. Technical session 6 was chaired by Dr. Murat Ferhat Dogdu in seminar room while the session 7 was chaired by Prof. Dr. Saeed Khalid in room A-3. During these sessions various invited talks were given by eminent scientists and shared their research work. The area addressed by presenters were bio-energy, polymer electrolyte fuel cell, activated carbon, recycling of lead batteries etc. Large

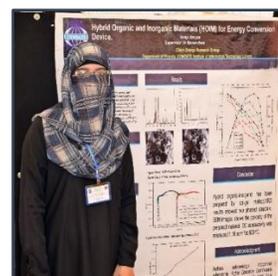
number of students across Pakistan had participated in these sessions and keenly put questions to their interesting topics.



**Technical Sessions are in Progress**

## Poster Session

On the 2<sup>nd</sup> day after the plenary talks, participants entertained with refreshment along with the poster presentations. About 18 participants from various universities presented their work at NanoSET-2017. The areas addressed in these posters are SOFCs, Li-Ion batteries, clean energy and energy technology etc. Best poster presenters were awarded with mementos and cash prizes.



## Comments by Participants

Prof. Dr. Jamil-un Nabi, Dean of Engineering Sciences- GIKI, appreciated the enthusiasm shown by the students. In his comments he emphasised that such scientific events must be held more frequently, so that our youth can have exposure of latest technological trends by interaction with foreign experts.



Prof. Dr. Nasar Ali from Manchester, UK greatly appreciated the successful organization of the conference. He commented as “I believe the conference was well attended and it was good to meet many scientists from all over Pakistan and overseas. The quality of the work presented during the 2 days of the conference was of a high standard. I believe NanoSET has the potential to become Pakistan’s leading nanotechnology conference with a focus on Energy”.



Ms. Maria Sattar, an MS student from NUST Islamabad also appreciated the conference in her comments. She highlighted the fact that such kind of platform gave an immense opportunity to local students to present their work at international forum. She also appreciated the hospitality of organising committee for such wonderful event.



## Foreign Delegates

Prof. Dr. Nasar Ali from Manchester, UK is an eminent scientist. He is the Founder & Chairman of NANOSMAT. Dr Ali has extensive research experience in hard carbon-coating materials, including nano-sized diamond coatings and carbon nanotubes deposited using CVD technologies. In his views at closing ceremony He also committed to offer one PhD fellowship to CIIT-Physics department students.



Prof. Sining Yun is from Xi'an University of Architecture and Technology, China. He is an expert of fuel cell technology and a renowned scientist. His major work is on Renewable energy including solar energy and biomass energy; characterization of transition metal compounds and their application in dye-sensitized solar cell, perovskite solar cells, and anaerobic digestion; dielectric relaxation behaviour and linear dielectric response. In his comments he appreciated the involvement of Pakistani students in technology related issues. He also promised to offer studentship to students.



Dr. Neslihan Yuca from Istanbul Technical University, Turkey is a famous scientist in the field of nanotube formation and characterizations. Her main work is on hydrogen production / storage and on Li-ion batteries. She is the head of energy research group and an author of numerous research publications.



## Conclusion

The auspicious closing ceremony was started with the recitation from the Holy Quran. A summary of three days International Conference was presented by Dr. M. Ashfaq Ahmad. He shared a brief about presented talks, the poster session and panel discussion. The foreign delegates assured their full support and collaboration for research projects funding from international donor agencies. Dr. Ashfaq mentioned that the scientific meetings have become a permanent tradition of Physics Department at COMSATS, Lahore in almost every semester. He appreciated the commitment of foreign experts for their participation. He presented the summary of the conference and shared that eminent Physicists & researchers from various parts of the country with diverse backgrounds shared their research and views in the conference. He feels delighted by the efforts of organizing committee for organizing such informative scientific event which made possible for our local students to interact with international experts.

He emphasized that such kind of events must be held on more frequent basis so that our local students get exposure on recent technological trends and get updated with latest developments. He also highlighted the fact that this international conference “NanoSET 2017” has been organised with very low budget in the history of CIIT conference series. In the end souvenirs and shields were presented to the participants and foreign delegates.



***Distribution of Souvenirs to Distinguished Guests***

## Conference Output

- Large number of oral presentations were given at the conference, about 10 selected papers will be submitted in the “**International Journal of Hydrogen Energy**” in its special issue with co-ordination of nanoenergy conference series (Finland).
- 4 PhD scholarships will be offered by Prof. Sining Yun & Prof. Bin Zhu from China & Sweden respectively for CIIT Lahore (Physics Department) students.
- Prof. Dr Nasar Ali from Manchester UK, promised to bring a Nobel laureate in the next conference to be held in 2019.

## Excursion Trip

An excursion trip to the cultural place “Badshahi Mosque and Lahore Fort” along with Flag ceremony at Wahga boarder was arranged for foreigners and invited speakers of NanoSET-17. Foreigners venerated this visit a lot and at night enjoyed shopping at Emporium Mall Lahore.



*Excursion trip of participants at wahga Border Flag Ceremony*

## Acknowledgement

The organizing committee of 2<sup>nd</sup> International Conference of NanoSET 2017 acknowledge the financial assistance and support of **Higher Education Commission (HEC)** for providing funds for this mega event. The organizing committee pays its utmost regards to **CIIT Lahore** for providing administrative and logistic support, without these such mega event could not be realized.

Along with them the following companies also provide financial assistance to the event;

- **MaxTECH Corporation**
- **Professional Systems (PVT) Limited**
- **LINKER Enterprises**
- **Sentron Asia International**

# *Glimpse of NanoSET 2017*



## Media Coverage



راشد نجیب اور ڈاکٹر دینہ



پروفیسر ڈاکٹر امین زہد خطاب کر رہے ہیں



پروفیسر ڈاکٹر ثانیہ، ڈاکٹر نسیم ایوب، ڈاکٹر امین زہد، ڈاکٹر طارق، ڈاکٹر محمد اشفاق، ڈاکٹر شہناز، ڈاکٹر طارق، ڈاکٹر امین زہد، ڈاکٹر نسیم ایوب، ڈاکٹر ثانیہ



ڈاکٹر محمد طارق اور شاہد لطیف



ڈاکٹر محمد آصف اور ڈاکٹر اکبر علی



ڈاکٹر نسیم اختر اور ڈاکٹر اعجاز انصاری



ڈاکٹر گل رحمان اور ڈاکٹر نصر اللہ شاہ

**کامیٹیس میں نیو سائنس کے توانائی پر اثرات کے عنوان سے کانفرنس**  
 بجلی کے بڑھتے ہوئے بحران کو جدید ٹیکنالوجی سے حل کرنے کے حوالے سے تجاویز پر بحث  
 راجستھان (مہاراشٹر) کی کامیٹیس میں نیو سائنس اور وفاقی حکومت اپنے دور میں بجلی کے بحران کو قابو  
 کے لیے توانائی پر اثرات کے عنوان سے تین روزہ پائلے میں کافی حد تک کامیاب ہوئی ہے۔ بجلی اور  
 کانفرنس میں بجلی کے بڑھتے ہوئے بحران کو جدید ٹیکنالوجی سے حل کرنے کے حوالے سے تجاویز پر بحث  
 سے حل کرنے کے حوالے سے تجاویز پر بحث  
 آئیں۔ سوہانی وزیر معدنیات شریلی خان نے ملکی سائنسدان اور مقررین نے کہا کہ جدید ٹیکنالوجی  
 خصوصی شرکت کی۔ کانفرنس کے پہلے روز نے اور ڈیوٹس کے استعمال سے پاکستان میں بجلی کے  
 میٹرل، ڈیوٹس کی تخلیق اور استعمال پر بحث ہوئی۔ بحران پر قابو پایا جاسکتا ہے۔  
 سوہانی وزیر معدنیات شریلی خان نے کہا کہ سوہانی (تساور: محمد عرفان)



خلیل احمد اور ڈاکٹر حفشار



ڈاکٹر رضوان اور ڈاکٹر حفشار



فرحان اور ڈاکٹر حفشار



ڈاکٹر حفشار اور ڈاکٹر آصف



سوہانی وزیر شریلی، پروفیسر طارق کا انتظامیہ اور ڈاکٹر زکریا کے ہمراہ گروپ فوٹو



حسنی اور طارق



انجینیئر، اقرا، ہارہ، عرفان اور اقرا حسین