



## ASSOCIATION NEWS

CELEBRATION OF 6<sup>th</sup> INTERNATIONAL DAY OF MEDICAL PHYSICS

The International Day of Medical Physics (IDMP) is celebrated globally on the birth date of Madam Marie Sklodowska Curie on 7 November 1887. This year the theme of the day was “Medical Physics for Patient Benefit”

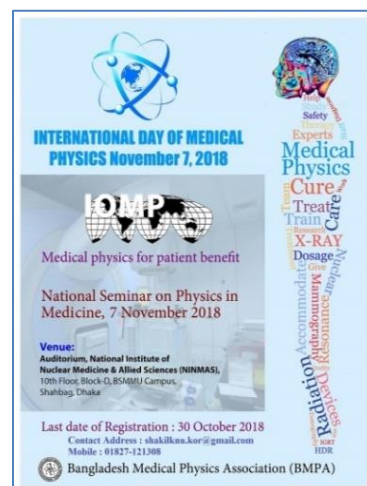


Group photo with Chief Guest (Chairman, Bangladesh Atomic Energy Commission), Prof. GU Ahmad, Prof. KS Rabbani, President and Secretary of BMPA with the medical physicists and physicians of radiation medicine at the Auditorium of National Institute of Nuclear Medicine & Allied Sciences (NINMAS), Dhaka.

On this occasion, Bangladesh Medical Physics Association (BMPA) organized a day-long seminar on “Relevance and Prospect of Medical Physics in Bangladesh” at the Auditorium of National Institute of Nuclear Medicine & Allied Sciences (NINMAS), Bangladesh Atomic Energy Commission at Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka on 7 November 2018.

The keynote speakers on this special day were: Prof. Dr. M. Aminul Islam, President, BMPA, Prof. Dr. Shamim Momtaz Ferdousi Begum, Head, PET-CT Division, NINMAS, Dr. Md. Shakilur Rahman, General Secretary, BMPA Prof. Dr. Qazi Mushtaq Hussain, Head, Department of Radiotherapy, Dhaka Medical College Hospital.

The speakers delivered their presentation on Radiotherapy, Treatment Planning, Quality Assurance, Dosimetry and Diagnostic Radiology and Imaging.



Mr. Mahbubul Hoq, Chairman, Bangladesh Atomic Energy Commission (BAEC) graced the occasion as Chief Guest and Prof. Dr. Md. Sanowar Hossain, Member, Bio-Science, BAEC and Prof. Dr. Nurun Nahar, Director, NINMAS embellished the event as Special Guests. However, Prof. Dr. M Aminul Islam, President, Bangladesh Medical Physics Association (BMPA) presided over the function.

During the Scientific session, three research works were presented by Mr. Md. Harun Or Roshid, Medical Physicist, Dept. of Oncology, Bangabandhu Sheikh Mujib Medical University, Bangladesh, Dr Mohammad Kamruzzaman (Rumman), Medical Physicist, National Institute of Cancer research and Hospital, Mohakhali, Dhaka. and Miss Nadia Akhter Mokta Deapartment of Physics, University of Chittagong.

Dr. Mohammad Kamruzzaman presented his work on Applied and transitional Radiology, while Md. Harun Or Roshid presented on Quality Assurance (QA) of Micro-Selectron HDR Remote after Loading Brachytherapy Unit and Miss Nadia Akter Mokta presented her work on beam dosimetry used on radiotherapy.

## Photo Gallery

### Celebration of the 6th International Day of Medical Physics, 2018



Prof. Dr. Qazi Mushtaq Hussain delivering his presentation on raditotherapy as key-note speaker.



Prof. Dr. Gias Uddin Ahmad, Ex-BMPA president addresses during the occasion.



Audience during the programme.



Dr. Shamim Momtaz Ferdousi Begum, Head, PET-CT Division, NINMAS addresses as key-note speaker.



Mahbubul Hoq, Chairman, Bangladesh Atomic Energy Commission (BAEC) addresses during the occasion



Prof. Dr. M. Aminul Islam, President, BMPA, addresses during the programme

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### **National Seminar cum Workshop on Standards and Applications of Radiation in Medicine**

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The Secondary Standard Dosimetry Laboratory (SSDL) and Training Institute of Atomic Energy Research Establishment (AERE) in collaboration with Bangladesh Medical Physics Association (BMPA) organized a day long National Seminar cum Workshop on Standards and Applications of Radiation in Medicine on February 22, 2018.

Secondary Standard Dosimetry Laboratory (SSDL) is the member state laboratory of IAEA and WHO for standardization of radiation beam used in medicine. It is the national standard laboratory for radiotherapy dosimetry (used for the treatment of cancer) with Quality Assurance (QA), and diagnostic radiology. The event specially focused on delivering the benefits of modern healthcare technology to the Low Resource Countries (LRC) who are facing challenges.

Member (Physical Science) of Bangladesh Atomic Energy Commission graced the occasion as Chief Guest, President of BMPA, Director General of Atomic Energy Research Establishment (AERE) were also graced the occasion as Special Guests.

Professor Dr. Guinyun Kim, Department of Physics, Kyungpook National University, Daegu, South Korea was present at the event as Guest of Honor. Dr. Nirmal Chandra Dafadar, Director, Institute of Nuclear Science and Technology chaired the programme.

The keynote speaker Prof. Aminul Islam, Prof. Kamila Afroz Quadir and Dr. Md. Shakilur Rahman delivered presentation on the development of medical physics in Bangladesh, PET-CT and Radiotherapy Quality assurance and Dosimetry program in Bangladesh.

In the afternoon session six popular research articles were presented on radiotherapy treatment planning, IMRT, IGRT, SBRT, small field dosimetry, Quality Assurance of Radiotherapy program of oncology centers by medical physicists working in government and private hospitals in Bangladesh.





Professor Dr. Guinyun Kim, Kyungpook National University, Daegu, South Korea addresses during the programme.



BMPA President Prof. Dr. M. Aminul Islam addresses during the programme.



Audience during the seminar on Standards and Applications of Radiation in Medicine

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### BMPA Executive Committee for the year 2018-19

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The elected President and General Secretary respectively of Bangladesh Medical Physics Association (BMPA).

Professor Dr. Aminul Islam, former Vice Chancellor of Shahjalal University of Science and Technology (SUST) and Dr. Md. Shakilur Rahman, Chief Scientific Officer, Secondary Standard Dosimetry Laboratory (SSDL), Bangladesh Atomic Energy Commission, and Project Director, Ministry of Science and Technology, Bangladesh and Guest Professor of Jahangirnagr University were elected as President and General Secretary respectively for Bangladesh Medical Physics Association (BMPA). The members of the association elected them for 2018-2019 at their Annual General Meeting held in January, 2018.

Prof. Dr. Kamila Afroj Quadir Ex-Director, Bio-Science Division, Bangladesh Atomic Energy Commission and Professor of Bangabandhu Sheikh Mujib Medical University and Dr. M. Monjur Ahasan, Chief Scientific Officer & Project Director Institute of Nuclear Medical Physics Bangladesh Atomic Energy Commission are elected as vice presidents of BMPA.

Dr. Tanvir Ahmed Biman, Principal Scientific Officer, National Institute of Nuclear Medicine and Allied Sciences (NINMAS), BSMMU Campus, Bangladesh Atomic Energy Commission is elected as Treasurer of the Association.

The other members of the new BPMA executive committee are: Joint Secretary 1: Md. Nahid Hossain Principal Scientific Officer, National Institute of Nuclear Medicine and Allied Sciences (NINMAS), BSMMU Campus, Bangladesh Atomic Energy Commission.

Joint Secretary 2: Harun-Or-Roshid, Medical Physicist, Department of Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU).

Scientific Secretary: Dr. Muhammad Abdul Kadir, Assistant Professor and Chairman Dept. of Biomedical Physics & Technology. University of Dhaka.

Publication Secretary: Dr. Humayra Ferdous. Assistant Professor, Department of Physics, Faculty of Science and Information Technology, American International University-Bangladesh (AIUB).

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## MEETING BETWEEN BMPA AND BANGLADESH ATOMIC ENERGY COMMISSION

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### **BMPA's Efforts for Certification and Accreditation of Medical Physicists in Bangladesh.**

Bangladesh Atomic Energy Commission (BAEC) is the leading organization of research and development in Bangladesh. There are 23 Nuclear Medicine Centers (Institute of Nuclear Medicine and Allied Sciences (NINMAS)) working for the diagnostic and therapeutic services under BAEC. Above 60 % of the total Medical Physicist in Bangladesh is working at Bangladesh Atomic Energy Commission.

For the training and development of Medical Physicist in Bangladesh a Nuclear Medical Physics Institute (INMP) and Radiotherapy Center is established in Bangladesh Atomic Energy Commission in 2017 under Bangladesh Government Annual Development Program (ADP). To improve the quality of radiotherapy treatment an ADP project titled "Radiotherapy, Diagnostic Radiology and Neutron Calibration and Quality Control Facilities" is a ongoing project at SSDL for the development of Medical Physics in Bangladesh.



Meeting BAEC with BMPA

BMPA is the Medical Physicist association mainly leaded by the personnel of Bangladesh Atomic Energy Commission, academic personnel of public and private universities, government and private radiotherapy centers.

A meeting was organized between BAEC and BMPA to find out the pathway for the development of Medical Physics in Bangladesh in October 2018. The meeting was presided over by the Chairman of Bangladesh Atomic Energy Commission Mr. Mahbubul Hoq. Dr. Imtiaz Kamal, Member (Planning), Dr. Abdus Salam, Member (Engineering) and Dr. Shakil Ahmed Khan (Director, Bio-Science Division) was present in the meeting from BAEC end.

BMPA Adviser and Founder BMPA President Prof. Gias uddin Ahmad, Prof. M. Aminul Islam (President, BMPA), Dr. Md. Shakilur Rahman (General Secretary, BMPA), Prof. Kamila Afroj Quadir, Dr. M. Monjur Ahasan (Vice-President, BAMP), Mr. Nahid Hossain (Assistant General Secretary, BMPA) were present in the program. Several decisions were taken by BAEC for the accreditation and certification course at INMP which is run by BAEC are given below:

- ✓ Bangladesh Medical Physics Association approached Bangladesh Atomic Energy Commission (BAEC) for a certification program for the clinically trained physicists.
- ✓ BAEC agreed to initiate a National Clinical Training Program which will run by the Medical Physics Institute of BAEC.
- ✓ BAEC also agreed to provide certificate to the residents' of present and past clinical training programme participants.

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## **Workshops/ Training/ Visit NEWS**

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### **Conference/Workshop/training program in Bangladesh:**



Workshop on RCA/IAEA

A workshop on RCA/IAEA project “Enhancing Medical Physics Services in Developing Standards, Education and Training through Regional Cooperation (RAS6087)” in Collaboration with Bangladesh Medical Physics Association was held at NINMAS, November 2<sup>nd</sup> 2018.

10 radiation oncology medical physicists, 4 Nuclear medicine medical physicists are involved in this project as Residents. There are 8 Supervisors are involved in this project.

The objectives of the workshop were:

- ✓ To update Residents' and Supervisors' to the AMPLE e-learning program
- ✓ To assess the progress of the Residents

### **Participation of BMPA members in different Conferences/Seminar/workshop.:**

1. Professor Kamila Afroj Quadir, Vice President of BMPA, joint the 18th Asia-Oceania Congress of Medical Physics (AOCMP) in Conjunction with the 16th South-East Asia Congress of Medical Physics (SEACOMP), Kuala Lumpur, Malaysia from 11-14 November 2018.
2. Meherun Nahar, Member of EC Committee of BMPA visits Indonesia as IAEA/ ORPAS reviewer.
3. Dr. Md. Shakilur Rahman, GS of BMPA visited at Japan Atomic Energy Agency, Toaki-mura to participate on Radiological Emergency program from June 18-July 28, 2018.
4. Dr. Md. Shakilur Rahman, GS of BMPA visited at IAEA HQ, Vienna, Austria under UN program from 10-18 November, 2018.

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## AWARD/ACHIEVEMENT

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### Professor Saiful Huq to lead American Association of Physicists in Medicine



American Association of Physicists in Medicine (AAPM), recently chose Bangladeshi scientist Prof. Dr. M. Saiful Huq to be its President-elect for 2019, President for 2020 and the Chairman of its Board of Directors for 2021. He is the 5<sup>th</sup> person in the history of AAPM from south Asia to assume this post. Being established in 1958 in the USA, AAPM has now about 9000 members in 98 countries all over the world.

Dr. Huq received his B. Sc. Honors (1974) and M.Sc. in Physics from the University of Dhaka (1976) and PhD (1984) in Atomic and Molecular Physics from the College of William and Mary, Virginia, USA. He switched to Medical Physics in 1988 and is currently a Professor of Radiation Oncology at the University of Pittsburgh School of Medicine and Director of Medical Physics at UPMC Hillman Cancer Center in Pittsburgh, Pennsylvania, USA. In his current role, he oversees the clinical medical physics operations of thirty cancer centers/hospitals in the western Pennsylvania region and two cancer centers in Ireland and two in Italy. He has published over 150 manuscripts in peer reviewed journals and has given over 170 invited talks/presentations all over the world.

Since the early 2000's, Dr. Huq has been intimately involved in improving the state of care of cancer patients in Bangladesh. He was involved in the design and development of National Institute of Cancer Research & Hospital in Dhaka and was responsible for bringing the clinically operational first generation of new linear accelerators to Bangladesh. Over the last eighteen years he has helped develop the education and training of physicians and physicists who are providing high quality cancer care to patients in Bangladesh. He also facilitated the direct involvement and continued support of the International Atomic Energy Agency (IAEA) to improve the standard and quality of care of Bangladesh cancer patients. Dr. Huq is the Life-Member of Bangladesh Medical Physics Association (BMPA).

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## NEWS OF THE DEPARTMENT OF BIOMEDICAL PHYSICS & TECHNOLOGY OF DHAKA UNIVERSITY

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### PhD Degree

The following three students successfully received PhD degrees against their respective theses mentioned below, in 2018.

1. Dr. Abdullah Al Amin, "Development of Electrical Control System through Human Brain Signal Analysis". Supervised by Professor K Siddique-e Rabbani of BMPT, Dhaka University.
2. Dr. Md Abdul Kadir, "Development of a Multi-Frequency System for Medical Application of Focused Impedance Method (FIM)", Jointly supervised by Professor K Siddique-e Rabbani and Professor Adrian J Wilson of Warwick University, UK under a Commonwealth Split-site Scholarship.



3. Zihad Tarafdar, “Software Development for a Secure Telemedicine System for Slow Internet Connectivity”, Jointly supervised by Professor K Siddique-e Rabbani and Professor Shabbir Ahmed of the Department of CSE, University of Dhaka.

### **K L Rabbani-Najmon Nesa Memorial Scholarship**

Based on excellent performance in MS examination, Ms. Anila Pasha (BME stream) and Ms. Tabinda Basharat (MP stream) were awarded the above Scholarship of the department. Cheques were handed over by Professor Md Akhtaruzzaman, Vice Chancellor of the University of Dhaka, at a simple ceremony on 21 October, 2018.

### **Appointment as Honorary Professor**

Professor K Siddique-e Rabbani, who retired in 2015, was appointed as an ‘Honorary Professor’ of the department for the session 2018-2019. He has been in this contract position since 2016.

### **International Collaboration**

1. Dr. Youssoufa Mohammadou, Lecturer, Université des Montagnes, Bangangte, Cameroon spent three months at BMPT, University of Dhaka in 2017 and is continuing on a research collaboration on Focused Impedance Method (FIM) and Telemedicine.
2. Professor K Siddique-e Rabbani is supervising two students of Tribhuvan University, Nepal, Mr. Trilochan Khanal and Mr. Tirtha Shah for their MS thesis. They are working on the development of instrumentation of Focused Impedance Method (FIM), an innovation of BMPT, and bio-electrical measurement using the developed instrument.
3. Professor K Siddique-e Rabbani is the Coordinator for the Bangladesh segment of a joint research project between Uppsala University, Karolinska Institute, both of Sweden, and the University of Dhaka. The departments of Microbiology and Botany are involved in this joint project entitled, “Evaluation of virus retentive filter paper for water treatment and clinical applications in real life studies in Bangladesh”, which is aimed to grow a particular variety of algae, making paper nano-filters out of this algae and testing for the removal of bacteria and virus from water samples. The project is funded by Swedish Research Council.

### **Award in Telemedicine**



Professor K Siddique-e Rabbani receives Commonwealth Digital Health Awards-2018, in Colombo, Sri Lanka.

‘Dhaka University Telemedicine Programme (DUTP)’, organised by the department under the leadership of Professor K Siddique-e Rabbani, became the winning project with the heading ‘Telemedicine-Bangladesh’ at the 3<sup>rd</sup> Commonwealth Digital Health Awards-2018, in the ‘Telemedicine’ category. Participants from 42 countries competed in 6 categories.



It was a remarkable evening for Bangladesh at a gorgeous ceremony in Colombo on 12 October, 2018, where the ‘Runners Up’ award in the same category also came to Bangladesh, won by ‘Tonic’ project of Telenor-Grameenphone.

It is worth mentioning that DUTP became the winner in BRAC-Manthan award 2016 in Bangladesh, Finalist in Manthan South Asia Award-2016 in India, and a Champion at World Summit of Information Societies Forum Award (WSIS-2017) in Geneva (through a2i).

### Summer Camp-2018

In collaboration with Dhaka University Science Society (DUSS) and Relevant Science & Technology Society-Bangladesh (RSTS), BMPT Department organised a summer camp during July 8 to July 12, 2018 on the “Measurement of Bioelectrical signals from the human body”. Twelve undergraduate students were selected who had both theoretical classes and hands on practice on the design and development of circuitry to record and display ECG and EMG signals. The participants were given a certificate at the end of the camp.

### ‘Science for Mankind’ Research Award -2018



BMPT department in collaboration with EMK (Edward M Kennedy) Center, Dhaka initiated a research award for undergraduate students in 2018 entitled, “মানুষের জন্য বজ্রিগ্ণান (in Bangla, meaning ‘Science for Mankind’). DUSS and RSTS were Joint Organisers. Monthly Biggan Chinta, Channel I TV and Radio ‘71 were the media partners while daily Prothom Alo was a media associate. Through three stages of evaluation by renowned experts seven teams were finally selected for the awards for three levels – ‘Top, Medium and Satisfactory’ –

through an exhibition organized at the Curzon Hall premises of Dhaka University on 15 September, 2018. Inaugurated by the Vice Chancellor of the Dhaka University, Professor Md. Akhtaruzzaman, the exhibition was followed by a Prize distribution ceremony and a programme of music, the latter organized by the Department of Music of the University of Dhaka.

### Seminars

BMPT department organized the following seminars during 2018.

1. ‘Scopes and Opportunities in the field of Biophotonics’, by Dr. Atikur Rahman Jewel, Optics Engineer, Optos PLC, Dunfermline, Scotland, UK, 3 January 2018.
2. ‘Study of Pore Formation in Lipid Membranes Using Irreversible Electroporation for Possible Application in Cancer Cell Ablation’, by Dr. Mohammad Abu Sayem Karal, Assistant Professor, Biophysics Research Laboratory, Bangladesh University of Engineering and Technology, 18 March 2018.

3. 'Software development for a secure telemedicine system for slow internet connectivity', by: Md. Zihad Tarafdar, PhD Seminar, Department of Biomedical Physics & Technology, University of Dhaka, 27 May 2018.
4. 'MRI and MR Fingerprinting: How it works' by Dr. Zaid Bin Mahbub, Assistant Professor, Department of Mathematics and Physics, North South University, Dhaka, 28 October, 2018.

### **Talks by Professor K Siddique-e Rabbani**

1. Keynote Lecture: "Biomedical Engineering research targeting people in low resource countries", 1<sup>st</sup> Global Conference on BioNanoMedIT (GC BNMIT), Dhaka, organized by the Biomedical Engineering (BME) Department of Jessore University of Science and Technology, 13 February 2018.
2. Invited Talk: "Applying Physics to Life", International Conference on Physics, Dhaka, organized by Bangladesh Physical Society, 08-10 March, 2018.
3. Invited Talk: "Addressing the young technological enthusiasts of Robolution-2018, - Sharing my thoughts", Robolution-2018 at Military Institute of Science & Technology (MIST), Dhaka, 24 March 2018.
4. Invited Talk: "বিজ্ঞান ও প্রযুক্তি গবেষণা: কেন ও কীভাবে করব?" (in Bangla, "Why and how should we do research in science & technology?"), Dhaka University Science Society Lecture, 5 May, 2018.
5. Invited Talk: "Research for life - focusing on people's needs", Premier University\_EEE-Aluminium Jubilee, Chittagong, 11 May 2018.
6. Participatory talk: "Experience of indigenous technology based Telemedicine in rural Bangladesh - years of successful implementation", Special session on 'Patient and Technology Management Challenges in Rural Health Centers' at IUPESM 2018 - World Congress on Medical Physics & Biomedical Engineering, Prague, 3-8 June, 2018.
7. Participatory talk: "Do we need undergraduate education in medical physics & biomedical engineering?" at IUPESM 2018 - World Congress on Medical Physics & Biomedical Engineering, Prague, 3-8 June, 2018.
8. Invited Talk: "সুনির্দিষ্ট লক্ষ্যে জীবন ঘনিষ্ঠ বিজ্ঞান গবেষণার অভিজ্ঞতা" (in Bangla, "Experience of science research relevant to life with definite targets"), Asiatic Society of Bangladesh, Dhaka, 31 July, 2018.
9. Invited Talk: "Research for life - focusing on people's needs", IEEE Women Chapter, Dhaka, 2 Oct 2018.
10. Address as Chief Guest: BME Fest 2018 at MIST, Dhaka, 4 October 2018.
11. Invited Talk: "Dhaka University Telemedicine Programme (DUTP) – innovations in technology and service delivery", International Conference on "Electronics and ICT", Dhaka, organized by Bangladesh Electronic Society, 25-26 November 2018.
12. Keynote Lecture: "The importance of indigenous development of computer-based technology in healthcare - seen through a chronicle of our own efforts", International Joint Conference on Computational Intelligence (IJCCI 2018), Dhaka, organized by Daffodil International University,

Jahangirnagar University of Bangladesh and South Asian University of India, 14 December 2018.

13. Participatory talk (through video): “Indigenous development of Medical Devices - a must for low resource countries”, 4<sup>th</sup> WHO Global Forum on Medical Devices, Visakhapatnam, India, 13-15 December 2018.

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## PUBLICATIONS

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1. Sadeka Sultana Rubai, Md Shakilur Rahman *et al.* “Measurements of Entrance Surface Dose and Effective Dose of Patients in Diagnostic Radiography” Biomed J Sci. & Tech. Res. 12(1), 1-5 (2018).
2. Kartick Raj Mani, Md. Anisuzzaman Bhuyian, Md. Shakilur Rahman *et al.* “Open Beam Dosimetry Characteristics of True Beam Medical Linear Accelerator with Flattening Filter (WFF) and Flattening filter free Beam” Pol. J. Medical Physics and Eng. 24(2), 79-89 (2018).
3. Kartick Raj Mani, Md. Anisuzzaman Bhuyian, Md. Shakilur Rahman *et al.* “Dosimetric Comparison of Deep Inspiration Breath Hold and Free Breathing Technique in Stereotactic Body Radiotherapy for Localized Lung Tumor using Flattening Filter Free Beam” Pol. J. Medical Physics and Eng. 24(1), 15-24 (2018).
4. Md. Ali Reza, Md. Rakibul Islam, Md. Shakilur Rahman *et al.*, Calibration of Therapy Level Ionization Chamber at <sup>60</sup>Co Teletherapy Beam used for Radiation Therapy, Int. Lett. Chem. Phys. Astro. 79, 1-9 (2018).
5. M. Shamsuzzaman, Md. Shakilur Rahman *et al.* “Dosimetry of Few <sup>60</sup>Co Teletherapy Units Used for the Treatment of Cancer Patient in Bangladesh” Bang. Jour. Phys. 21, 23-30 (2018).
6. Santunu Purohit, Md. Shakilur Rahman *et al.* “Study of Measurement of Relative Dose with Various ionization Chamber for Small Field Dosimetry of 6 MV Photon Beam” J. Nucl. Sci. Appl. 26 (1 &2) 23-27 (2017) (Published in 2018).
7. Kartick Raj Mani, Md. Shakilur Rahman *et al.* “Determination of Beam Quality of High Energy Photons in Non-Standard Reference Condition Using Linear Fit Method” Jour. Nucl. Sci. Appl. 26 (1 & 2) 17-21 (2017) (Published in 2018).

### **e-Newsletter Editors Panel:**

1. Dr. Humayra Ferdous, Publication Secretary, BMPA
2. Dr. Md. Shakilur Rahman, General Secretary, BMPA
3. Md. Nahid Hossain, Assistant General Secretary, BMPA

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