

**Information about Funded Research Projects of  
Departments/Institutes/Centers, BUET**

1. Name of the Department/Institute/Center: Physics
2. Time period: 01 July 2019 – 30 June 2020
  - Number of research projects received grants: **13**
  - Total grant amount received (in BDT): **1,03,64,500/-**
  - Number of Research Assistants supported: **08**
  - Information about research projects:

Sl. No.	Name of project	Project start date	Project end date	Funding/Grant authority	Principal investigator	Co-PI(s)/Co-investigator(s)	Grant Amount (in BDT)
1	Synthesis, Characterization and fabrication of nanostructured thin films based gas sensor for environmental applications	01 July, 2019	30 June, 2020	Ministry of Science and Technology (MOST)	Prof. Dr. Jiban Podder	Dr. Muhammad Samir Ullah	7,00,000/-
2	Study on Characteristics of Lightning Flash and Associated Hydrometeors	01 July, 2019	30 June, 2020	Ministry of Education, Government of the People's Republic of Bangladesh	Prof. Dr. Md. Rafi Uddin	Prof. Dr. Nasreen Akter	4,00,000/-
3	Synthesis of MoS <sub>2</sub> incorporated GaFeO <sub>3</sub> nanocomposite and investigation of their structural and magnetoresistive properties along with photocatalytic dye degradation and hydrogen production ability	01 July 2019	Continued	Ministry of Education	Prof. Dr. Mohammed Abdul Basith	Prof. Dr. Md. Forhad Mina	8,00,000/-
4	Mechanism of Nanoparticles-Induced Pore Formation in Lipid Membranes of Vesicles	July 2019	June 2021	The World Academy of Science (TWAS), Trieste, Italy	Dr. Mohammad Abu Sayem Karal	N/A	14,30,000/-
5	Investigation of Nanoparticles-Induced Shape Change and Pore Formation in the Lipid Membranes of Vesicles for Antibacterial Application	July 2019	June 2022	Ministry of Education, Government of Bangladesh	Dr. Mohammad Abu Sayem Karal	Dr. Muhammad Khurshed Alam	13,00,000/-

Sl. No.	Name of project	Project start date	Project end date	Funding/Grant authority	Principal investigator	Co-PI(s)/Co-investigator(s)	Grant Amount (in BDT)
6	Irreversible Electroporation Induced Rate Constant of Pore Formation in the Lipid Membranes of Vesicles for Biomedical Application	July 2019	June 2020	Ministry of Science and Technology, Government of Bangladesh	Dr. Mohammad Abu Sayem Karal	Dr. Muhammad Khurshed Alam	5,00,000/-
7	Development of a Microcontroller Based Electroporation Technique for the Study of Pore Formation in Artificial Nano Membranes targeting Cancer Cell Ablation	January 2019	June 2020	ICT Division, Government of Bangladesh	Dr. Mohammad Abu Sayem Karal	N/A	16,50,000/-
8	Shape Change and Pore Formation in Cell Like Vesicle Using Eco-friendly Synthesized Nanoparticles for Antibacterial Application	March 2020	February 2021	University Grants Commission (UGC), Bangladesh	Dr. Mohammad Abu Sayem Karal	N/A	3,00,000/-
9	Effects of Cholesterol on the Irreversible Electroporation (IRE) Induced Rupture of Cell like Vesicles for Biomedical Application	March 2020	February 2021	Committee for the Advanced Studies and Research (CASR), BUET, Dhaka Bangladesh	Dr. Mohammad Abu Sayem Karal	N/A	6,84,500/-
10	Carbon Nanotube Reinforced Nanocomposites of Natural Polymers for Biofriendly Applications	01 July, 2019	30 June, 2020	Ministry of Science and Technology, Government of Bangladesh	Dr. Mohammad Jellur Rahman	Dr. Parvin Sultana	4,00,000/-
11	Synthesis and characterization of eco-friendly, biodegradable plastic nano-composite using graphene Nano-filler for energy storage applications	July-2019- June-2020	30 June-2020	Ministry of Science and Technology, Bangladesh.	Dr. Muhammad Rakibul Islam	Prof. Dr. Md. Forhad Mina	5,00,000/-
12	Making plastic green: eco-friendly, biodegradable plastic nano-composite using plant-derived polymer with 2D graphene nano-filler	April-2019- March-2020	31 March, 2020	University Grant Commission, Bangladesh	Dr. Muhammad Rakibul Islam	N/A	3,00,000/-

Sl. No.	Name of project	Project start date	Project end date	Funding/Grant authority	Principal investigator	Co-PI(s)/Co-investigator(s)	Grant Amount (in BDT)
13	Synthesis and characterization of carbon nanotube-polymer nanocomposite for energy storage applications	July-2017-June-2020	30 June-2020	Ministry of Education, Bangladesh	Dr. Muhammad Rakibul Islam	Prof. Dr. Md. Forhad Mina	14,00,000/-

### 3. Time period: 01 July 2020 – Present

- Number of research projects received grants: **11**
- Total grant amount received (in BDT): **70,14,500/-**
- Number of Research Assistants supported: **05**
- Information about research projects:

Sl. No.	Name of project	Project start date	Project end date	Funding/Grant authority	Principal investigator	Co-PI(s)/Co-investigator (s)	Grant Amount (in BDT)
1	Synthesis, Characterization and fabrication of nanostructured thin films based gas sensor for environmental applications	01 July, 2020	30 June, 2021	Ministry of Science and Technology (MOST)	Prof. Dr. Jiban Podder	Dr. Muhammad Samir Ullah	4,00,000/-
2	Study on Characteristics of Lightning Flash and Associated Hydrometeors	01 July, 2020	30 June, 2021	Ministry of Education, Government of the People's Republic of Bangladesh	Prof. Dr. Md. Rafi Uddin	Prof. Dr. Nasreen Akter	4,00,000/-
3	Study on Tropical Cyclone-Spawmed Tornadoes over the Bay of Bengal	01 July, 2020	30 June, 2021	Ministry Of Science And Technology	Prof. Dr. Nasreen Akter	Prof. Dr. Md. Rafi Uddin	4,00,000/-
4	Synthesis of MoS <sub>2</sub> incorporated GaFeO <sub>3</sub> nanocomposite and investigation of their structural and magnetoresistive properties along with photocatalytic dye degradation and hydrogen production ability	01 July 2019	Continued	Ministry of Education	Prof. Dr. Mohammed Abdul Basith	Prof. Dr. Md. Forhad Mina	700,000/-
5	Mechanism of Nanoparticles-Induced Pore Formation in Lipid Membranes of Vesicles	July 2020	June 2021	The World Academy of Science (TWAS), Trieste, Italy	Dr. Mohammad Abu Sayem Karal	N/A	14,30,000/-

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8	Shape Change and Pore Formation in Cell Like Vesicle Using Eco-friendly Synthesized Nanoparticles for Antibacterial Application	March 2020	February 2021	University Grants Commission (UGC), Bangladesh	Dr. Mohammad Abu Sayem Karal	N/A	3,00,000/-
9	Effects of Cholesterol on the Irreversible Electroporation (IRE) Induced Rupture of Cell like Vesicles for Biomedical Application	March 2020	February 2021	Committee for the Advanced Studies and Research (CASR), BUET, Dhaka Bangladesh	Dr. Mohammad Abu Sayem Karal	N/A	6,84,500/-
10	Biopolymer Extracted Nanocelluloses and Smart Fibers for Future Technology	July 2020	June 2021	Ministry of Science and Technology, Government of Bangladesh	Dr. Mohammad Jellur Rahman	Dr. Parvin Sultana	5,00,000/-
11	Synthesis and characterization of eco-friendly, biodegradable plastic nano-composite using graphene Nano-filler for energy storage applications	July-2020- June-2021	30 June- 2021	Ministry of Science and Technology, Bangladesh.	Dr. Muhammad Rakibul Islam	Prof. Dr. Md. Forhad Mina	4,00,000/-

Signature of the Head/Director of the Department/Institute/Centre