NITER

Dr. Md. Abul Kalam

Physics

Bio

Dr. Md. Abul Kalam has been working in the department of Physics at National Institute of Textile Engineering and Research (NITER) which is a constituent institute of University of Dhaka since 1 January, 2019. He is actively servicing in this institute as an assistant professor since 1 September, 2019. Besides teaching, he is very much enthusiastic about expanding his research skills. His research interest include nanomaterials especially carbon nanotubes (CNTs) synthesis using plasma technology, cellulose nanofiber, nanocomposite, nanobiocomposite, polymer composite production and their characterization, experimental and theoretical study of transport phenomena, material-environment interfaces. He obtained his Ph.D degree in 2018 from Shizuoka University, Japan on Optoelectronics and Nanostructure Sciences. He completed his B. Sc. in Physics from the department Physics in 2009 (exam held in 2011) and M. Sc. in Theoretical Physics from the department of Theoretical Physics in 2010 (exam held in 2012) of the University of Dhaka. His M. S thesis title was **"Atomic Transport Properties of $In_{0.5}Bi_{0.5}$ Alloys at Different Thermodynamic State".** After completing M. Sc. he joined as a lecturer in the department of Physics at Cambrian College, Dhaka. Later in October, 2014 he went to Japan for pursuing Ph.D with Shizuoka University Environment Leadership (ELSU) Scholarship. His Ph.D dissertation title was **"Study of the bipolar pulsed arc discharge method for the efficient production of single wall carbon nanotubes."**

Education

Degree Name	Group/Major Subject	Board/Institute	Country	Passing Year
Ph. D	Optoelectronics & Nanostructure Science	Graduate School of Science and Technology, Shizuoka University	Japan	14 Sep. 2018
M. S	Theoretical Physics	University of Dhaka	Bangladesh	2010 (exam held in 2012)
B. Sc. (Hons)	Physics	University of Dhaka	Bangladesh	2009 (exam held in 2011)
H. S. C	Science	Cumilla	Bangladesh	2005
S. S. C	Science	Cumilla	Bangladesh	2003

Experience

Job Title	Organization	Location	From Date	To Date
Assistant Professor	NITER	Nayarhat, Savar, Dhaka	September 1, 2019	present
Lecturer	NITER	Nayarhat, Savar, Dhaka		August 30, 2019
Scientific Researcher	Shizuoka University	Japan	April 2015	September 2017
Research Assistant (RA)	Plasma Science Laboratory, Shizuoka University	Japan	June 2018	September 2018
Research Assistant (RA	Plasma Science Laboratory, Shizuoka University	Japan	November 2017	February 2018
Research Assistant (RA	Plasma Science Laboratory, Shizuoka University	Japan	November 2014	February 2015
Teaching Assistant (TA)	Department of Physics, Shizuoka University	Japan	April 2016	September 2016
Teaching Assistant (TA)	Department of Physics, Shizuoka University	Japan	April 2015	September 2015
Lecturer	Cambrian College	Dhaka, Bangladesh	May 2013	August 2014

Research Activities

Research Interest

Subject	Description	Research Interest (Goal/ Target Indicatior)
Nanoscience & Nanotechnology	Synthesis of carbon nanomaterials especially carbon nanotubes using plasma technology, nanomaterials characterization using TEM, SEM, Raman spectroscopy, TG-DTA etc., production of conducting textiles and composites, development of CNT based pressure sensor for human health monitoring, CNT based energy storage devices. Synthesis of cellulose nanofiber employing mechano-chemical method, their characterization using TEM, SEM, DLS and Zeta potential, and application in nano-bio composite production.	
Condensed Matter Physics	Theoretical and experimental investigation of transport phenomena (Diffusion, viscosity, electrical and thermal conductivity etc.)	
Material-environment interfaces	Production of ceramic material and study their effect on the environment.	

Project/Research Supervision

Level of Study	Title	Supervisor	Co-Supervisor(s)	Name of Student(s)	Area of Research	Current Completion
M. S	Production and properties of leather waste extracted gelatin nano composite sheet for advance		Dr. Md. Abul Kalam	Sadia Afrin Mimu	Bio-nano composite	Completed

	technology				
M. S	Preparation of composite sheets from solid leather waste with plant fibers – a waste utilization effort.	Dr. Md. Abul Kalam	Md. Tauhiduzzaman	Polymer composites	Completed
B. Sc. (project)	Flexible fish gelatin extraction from hilsha fish scale	Dr. Md. Abul Kalam	Md. Morshed Ali	Soft biopolymer material	Completed

Membership

Collaboration & Membership Name	Type	Membership Year	Expire Year
Bangladesh Physical Society		2023	Life time
Bangladesh Nanosociety		2021	Life time
Dhaka University Physics Alumni Association		2023	Life time

Publications

Journal Article

SL. No-	Article Name	Link
1	**Md Abul Kalam** and Tetsu Mieno (2018) Pressure and discharge current dependence of production rate of single-walled carbon nanotubes by the bipolar pulsed arc discharge method. *Fullerenes, Nanotubes and Carbon Nanostructures*, 26 (7): 458-464.	DOI: 10.1080/15363X.2018.1448387
2	**Kalam Md Abul** (2018) "Study of the bipolar pulsed arc discharge method for the efficient production of single-walled carbon nanotubes" Ph.D Thesis, Shizuoka University.	DOI: 10.14945/00027570
3	**Md Abul Kalam,** Tetsu Mieno and Beatriz Estela Casareto (2108) Development of artificial fish reef using environmentally safe ceramic material. J *Ecosys Ecograph* 8 (1): 253 (7 pages).	DOI: 10.4172/2157-7625.1000253

Conference Proceedings

SL. No-	Paper Name	Link
1	**Md. Abul Kalam**, Salvin Mustakim, Mohammad Jellur Rahman and Tushar Uddin (2023). Bio-Degradable Microelectric Fiber from Moringa Oleifera Fruit Fiber reinforced with Safely Functionalized Carbon Nanotubes. National Conference on Physics, Bangladesh Physical Society, Jahangirnagar University, 9 – 11 March, 2023.	
2	Salvin Mustakim, **Md. Abul Kalam** and Mohammad Jellur Rahman (2023). Structural and Morphological Studies on Gelatin Based Ternary Nanocomposites. 5th International Conference on Physics for Sustainable Development and Technology (ICPSDT-2023), Department of Physics, Chittagong University of Science and Technology, 7 – 8 September, 2023.	
3	**Md Abul Kalam** and Tetsu Mieno (2016) Measurement of temperature variation of anode during the production of single-walled carbon nanotubes by the bipolar arc discharge method. *Proceeding of the 18th Takyanagi Kenjiro Memorial Symposium*, Shizuoka University, Hamamatsu, Japan, Nov. 15-16, 2016.	
4	**Md Abul Kalam** and Tetsu Mieno, Discharge current and pressure dependence of production rate of single-walled carbon	

	nanotubes by the low frequency bipolar pulse arc discharge method. *Proceeding of the 14th International Conference on Global Research and Education*, Shizuoka University, Hamamatsu, Japan, September 28-30, 2015.
5	**Md. Abul Kalam,** Kazi Hanium Maria and Tetsu Mieno, "Synthesis of single-walled carbon nanotubes by bipolar pulsed arc discharge method (Parameter Dependence)", 2015 Workshop on Green Science and Technology of Global Young Researchers, Shizuoka University, Shizuoka, Japan, January 26, 2015.
6	**Md Abul Kalam** and Tetsu Mieno, "Development of artificial fish reef from economical and environmentally safe ceramic material", 2017 International Symposium Toward the Future of Advance Researches in Shizuoka University, Shizuoka University, Shizuoka, Japan, February 27, 2017.
7	**Md Abul Kalam** and Tetsu Mieno, "Investigation of temperature variation of anode during the production of single-walled carbon nanotubes by the bipolar arc discharge method", The 9th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials, and 10th International Conference on Plasma-Nano Technology& Science, Chubu University, Aichi Japan, March 1-5, 2017.
8	**M. A. Kalam,** M. R. Amin, A. Z. Z. Ahmed, G. M. Bhuiyan "Atomic transport properties of $In_{0.5}Bi_{0.5}$ liquid binary alloys''; 4th International Symposium, Shizuoka University, Shizuoka, Japan, December 1-2, 2014
9	**Md. Abul Kalam,** M.R Amin, A. Z. Ziauddin Ahammed and G. M. Bhuiyan "Atomic transport properties of $Ino_{.5}Bio_{.5}$ alloys at different thermodynamic state", International Bose Conference, University of Dhaka, Bangladesh, February 4, 2013.

Award

Award Type	Title	Year	Country	Description
International	Shizuoka University Environment Leadership (ELSU) Scholarship	2015	Japan	
International	Shizuoka University International Student Scholarship	2016	Japan	

Local	Grameen Bank Scholarship	2004	Bangladesh
Local	Junior High School Scholarship	1998	Bangladesh

Contact

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Institute – Faculty
Name of the Department: Computer Science & Engineering
Position: Assistant Professor