CURRICULUM VITAE

Dr. Kaniz Fatema Kakolee
kakolee_kaniz@yahoo.com
Mobile: 01922033788

Current Position:

Associate Professor, Department of Physics, Jagannath University, Dhaka, Bangladesh.

Education:

PhD: PhD (Laser Plasma Physics), **2012**.

International Research Centre for Experimental Physics (IRCEP)

School of Mathematics and Physics,

Queen's University Belfast,

United Kingdom.

Funded by EPSRC (Engineering and Physical Sciences Research Council), U.K.

Thesis Title: "Laser Driven Acceleration of Ions and its Application in Radiobiology".

Master of Science (M. Sc.) in Physics: Jahangirnagar University, Dhaka, Bangladesh, 2007, Result: First Class (First position in order of merit).

Bachelor of Science (B. Sc.) in Physics: Jahangirnagar University, Dhaka, Bangladesh, 2006, Result: First Class (First position in order of merit).

H.S. C (Higher Secondary School Certificate): Jahangirnagar University School & College, Dhaka, Bangladesh, 1999. Result: First Division.

S.S.C (Secondary School Certificate): Jahangirnagar University School & College, Savar, Dhaka, Bangladesh, 1997. Result: First Division.

Teaching Experiences:

24/8/2017 – Current: Associate Professor, Department of Physics, Jagannath University, Dhaka, Bangladesh.

11/5/2013 – 23/8/2017: Assistant Professor, Dept of Physics, Jagannath University, Dhaka, Bangladesh.

6/1/2008 – 11/5/2013: Lecturer, Dept of Physics, Jagannath University, Dhaka, Bangladesh.

4/10/ 2007 – 5/1/2008: Lecturer, Dept of Textile and Electrical Engineering, Prime Asia University, Dhaka, Bangladesh.
3/8/2007 – 3/10/2007: Lecturer, Manarat International College, Dhaka, Bangladesh.

Research Experience:

1. Research Scientist [**1/6/2014 – 29/5/2016**] **Center of Relativistic Laser Science** [CoRELS], Ultrashort Quantum Beam Facility[UQBF], **Institute for Basic Science**[IBS], Gwanju Institute of Science and Technology [GIST campus], Gwangju, **South Korea**.
2. Research Scientist [**1/2/2014- 31/5/2014**], **OIP (optical information processing) lab**, **College of Electrical & Computer Engineering,** Chungbuk National University, Cheongju, South Korea.
3. Performed experiment [5/5/2009-16/6/2009, 1/10/2010-/12/2010] in **Rutherford Appleton Laboratory** [RAL], Vulcan Petawatt laser system , Harwell campus, Didcot, Chilton, UK
4. Performed experiment [1/82010-1/9/2010] in Medical Physics department**, University of Birmingham**, Birmingham, UK.

Invitation:

Invited by **Chinese Academy of Sciences** [**14/9/2019- 9/10/2019**], visited **Shanghai Institute of Optics and Fine Mechanics [SIOM]** , Shanghai, China and performed experiment at *Shenguang-II Laser* Facility in collaboration with Helmholtz-Zentrum Dresden-Rossendorf [HZDR], Germany.

Attended Conferences:

1. **10th Asia Pacific Laser Symposium** [APLS-CLEO], Jeju island, South Korea, **May 2016** .
2. **Conference on Lasers and Electro Optics** [CLEO], Busan exhibition and convention center, Busan, South Korea, **August 2015**.

3. **Korean Physical Society** [KPS meeting], Daejeon Convention center, Daejeon, South Korea, **April 2015**.
4. **Korean Physical Society** [KPS meeting], Kimdaejung Convention center, Gwangju, South Korea, **October 2014**.
5. Conference of **Optical Society of Korea** [OSK, COEX], Busan, South Korea, **May 2014**.
6. **High Power Laser Meeting,** Rutherford Appleton Laboratory, U.K, **December 2011**.
7. **International Conference on Phenomena in Ionized Gases** [ICPIG], Belfast, Northern Ireland, United Kingdom, **August 2011**.
8. **38th European Physical Society** [EPS] Conference, Strasburg, France, **June 2011**.
9. **Institute of Physics [IOP]Conference,** Scotland, **April 2011**.
10. **52nd American Physical Society [APS] Conference,** Chicago, U. S. A, **November 2010**.
11. **Laser at 50 Workshop, Belfast, UK, September 2010.**
12. **37th European Physical Society** [EPS] Conference, Dublin, Ireland, **June 2010**.
13. **Laser Induced Beam Radiation and Application** [LIBRA] open day**,** London, **February 2010**.
14. **Science and Technology Facilities Council** [STFC] workshop, Oxfordshire, U. K. **January 2010**.
15. **High Power Laser Meeting,** Rutherford Appleton Laboratory, U.K, **December 2010**.
16. **High Power Laser Meeting,** Rutherford Appleton Laboratory, U.K, **December 2009**.

Publications:

1. "Proton acceleration through a charged cavity created by ultra intense laser pulse"
S. Ter-Avetisyan, P. K. Singh, A. A. Andreev, **K. F. Kakolee** , H. Ahmed, M. H. Cho, S. Sharif, C. Scuillion, P. Hadjisolomnou and M. Borghesi,
Physics of Plasmas [PoP, Vol.26, Issue 10), **October 2019.**

2. "Intensified proton and carbon ion flux from femto second laser-matter interaction"

P. K. Singh, A. A. Andreev, **K. F. Kakolee,** and S. Ter-Avetisyan,
Physics of Plasmas, 25, 2018.

3. "PW laser pulse interaction with target and ion acceleration"
S. Ter-Avetisyan, P.K. Singh, **K.F. Kakolee**, H. Ahmed, T.W. Jeong, C. Scullion, P. Hadjisolomou, M. Borghesi and V. Yu. Bychenkov.
Nuclear Inst. and Methods in Physics Research, A 909,156–159, March 2018.

4. "Ion acceleration in electrostatic field of charged cavity created by ultra-short laser pulses of 10^{20}–10^{21} W/cm^2"
V. Yu. Bychenkov, P. K. Singh, H. Ahmed, **K. F. Kakolee**, C. Scullion, T. W. Jeong, P. Hadjisolomou, A. Alejo, S. Kar, M. Borghesi and S. Ter-Avetisyan.
Phys. Plasmas 24, pp01070-1-6, 2017.

5. **"**CR-39 track detector for multi-MeV ion spectroscopy"
T. W. Jeong, P. K. Singh, C. Scullion, H. Ahmed, P. Hadjisolomou, C. Jeon, H. Yun, **K. F. Kakolee**, M. Borghesi and S. Ter-Avetisyan.
Nature Scientific Reports, pp 1-8, May 2017.

6. "Surface modulation and back reflection from foil targets irradiated by a Petawatt femtosecond laser pulse at oblique incidence"
S. Ter-Avetisyan, A. Avdreev, K. Platonov, J. H. Sung, S. K. Lee, H. W. Lee, J. Y. Yoo, P. K. Singh, H. Ahmed, C. Scullion, **K. F. Kakolee**, T. W. Jeong, P. Hadjisolomou and M. Borghesi.
Optics Express, Vol. 24, No. 24 , pp 28104-28112, 28 Nov 2016.

7. "Scaling of Ion Spectral Peaks in the Hybrid RPA-TNSA Region"
K. F. Kakolee, M. Borghesi, M. Zepf, S. Kar, D. Doria, B. Ramakrishna, K. Quinn, G. Sarri, J. Osterholz, M. Cerchez, O. Willi, X. Yuan and P. McKenna.
Journal of the Korean Physical Society, Vol. 68, No. 6, pp 768-771, March 2016.

8. **"**A diagnostic for micrometer sensitive positioning of solid targets in intense laser-matter interaction"

Prashant Kumar Singh, **K. F. Kakolee**, T.W. Jeong and Sargis Ter-Avetisyan.

Nuclear instruments and Methods in Physics Research A, 829, pp 363-366, 2016.

9. **"**Experimental evaluation of the response of micro-channel plate detectors to in with 10 s of Mev energies"

S. Ter-Avetisyan, A. Avdreev, K. Platonov, J. H. Sung, S. K. Lee, H. W. Lee, J. Y. Yoo, Tae Won Jeong, P. K. Singh, C. Scullion, H. Ahmed, **K. F. Kakolee**, P. Hadjisolomou, A. Aarn, S.Kar, M. Borghesi and S. Ter-Avetisyan.

Review of Scientific Instrument, 87, 2016.

10. "Development of foam-based layered targets for laser-driven ion beam production"

I. Prencipe, A. Sgattoni, D. Dellasega, L. Fedeli, L. Cialfi, I. W. Choi, I. J. Kim, K. A. Janulewicz, **K. F. Kakolee**, H. W. Lee, J. H. Sung, S. K. Lee, C. H. Nam and M. Passoni.

Plasma Phys. Control. Fusion, 58, 3, pp 034019-27, 2016.

11. "Buffered high charge spectrally-peaked proton beams in the relativistic-transparency regime"

N. P. Dover, C. A. J. Palmer, M. J. V. Streeter, H. Ahmed, B. Albertazzi, M. Borghesi, D. C. Carroll, J. Fuchs, R. Heathcote, P. Hilz, **K. F. Kakolee**, S. Kar, R. Kodama , A. Kon, D. A. MacLellan, P. McKenna, S. R. Nagel, D. Neely, M. M. Notley, M. Nakatsutsumi, R. Prasad, G. Scott, M. Tampo, M. Zepf, J. Schreiber and Z. Najmudin.

New J. Phys., 18, pp 0103038-46, 2016.

12. "Experimental investigation of hole boring and light sail regimes of RPA by varying laser and target parameters"

S Kar, **K F Kakolee**, M Cerchez, D Doria, A Macchi, P McKenna, D Neely, J Osterholz, K Quinn, B Ramakrishna, G Sarri1, O Willi, X H Yuan, M Zepf and M Borghesi

Plasma Phys. Control. Fusion, 55, 12, pp 124030-35, 2013.

13. "Ion acceleration in multispecies targets driven by intense laser radiation pressure"

S. Kar, **K. F. Kakolee**, B. Qiao, M. Cerchez, D. Doria, M. Geissler, A. Macchi, P. McKenna, D. Neely, J. Osterholz, R. Prasad, K. Quinn, G. Sarri, O. Willi, X.Y Yuan, M. Zepf, and M. Borghesi.

Phys. Rev. Lett. 109, pp 185006-1-5, 2012.

14. . "Biological effectiveness on live cells of laser driven protons at dose rates exceeding 10^9Gy/s"

D. Doria, **K. F. Kakolee**, S. Kar, S. K. Litt, F. Fiorini, H. Ahmed, S. Green, JC. G. Jeynes, J. Kavanagh, D. Kirby, K. J. Kirkby, C. L. Lewis, M.J. Merchant, G. Nersisyan, R. Prasad, K.M. Prise, G. Schettino, M. Zepf, M. Borghesi.

AIP Advances 2, pp 011209-1-6, 2012.

15. "Dosimetry and spectral analysis of a radiobiological experiment using laser-driven proton beams"

F. Fiorini, D. Kirby, M. Borghesi, D. Doria, J. C. G Jeynes, **K. F. Kakolee**, S. Kar, S. Kaur, K. J. Kirby, M. J. Merchantand and S Green.

Phys. Med. Biol. 56, pp 6969–6982, (2011).

16. "A Study on Physical Parameters Related to Image Quality in Mammography Procedure."

K. F. Kakolee, M. A. Hakim, A. S. Mollah and M. M. Akramuzzaman.

Jahangirnagar Physics Studies Vol. 14, 2008.

17. "Cell irradiation experiment using laser driven protons at ultra-high dose rate "

K. F. Kakolee, D.Doria, F. Fiorini, S.Kar, S.Litt, H.Ahmed, S.Green, J.C.Jeynes, J.Kavanagh, D.Kirby, K.Kirkby, M.Merchant, R.Prasad, K.M. Prise, G.Schettino, M.Zepf,
M.Borghesi.

EPS (European Physical Society) Conf. Proc., 2011.

18. "Fast ions and plasma jets Driven by Intense Laser Radiation Pressure"

K. F. Kakolee, S. Kar, D. Doria, B. Qiao, B. Ramakrishna, G. Sarri, K. Quinn, M. Zepf, X.
Yuan, P. McKenna, M. Cerchez, J. Osterlholz, O. Willi, A. Macchi, M. Borghesi.
ICPIG (International Conference on Phenomena in Ionized Gases) Conf. Proc., 2011.

19. "Characterization of plasma jets from thin foils irradiated at high laser intensity"
K. F. Kakolee, D. Doria, S. Kar, B. Ramakrishna, G. Sarri, K. Quinn, J. Osterholz, M. Cerchez, O. Willi, X. Yuan, P. McKenna, M. Borghesi,
EPS (European Physical Society) Conf. Proc., 2010.

20. "Plasma jets and narrow bandwidth ion spectra from thin foils irradiated at high laser intensity "
K. F. Kakolee, S. Kar, D. Doria, B. Ramakrishna, G. Sarri, K. Quinn, J. Osterholz, M. Cerchez, O. Willi, X. Yuan, P. McKenna, M. Borghesi.
Science and Technology Facilities Council [STFC], Central Laser Facility [CLF] Annual Report, 2010.

21. "Narrow Bandwidth Ion Spectra From Petawatt Interaction With Sub-um foils"
K. F. Kakolee, S. Kar, D. Doria, B. Ramakrishna, G. Sarri, K. Quinn, J. Osterholz, M. Cerchez, O. Willi, X. Yuan, P. McKenna, M. Borghesi.
Science and Technology Facilities Council [STFC], Central Laser Facility [CLF] Annual Report, 2011.

22. "Implications of primary and secondary sources of debris for ultrathin targets on Vulcan Petawatt"

D. C. Carroll, D. A. MacLellan, G. Scott, P. McKenna, S. Kar, R Prasad, **K. F. Kakolee**, H. Ahmed, D. Doria and M. Borghesi.

Science and Technology Facilities Council [STFC], Central Laser Facility [CLF] Annual Report, 2011

Member/ Examiner

1. Member of **Korean Physical Society** [KPS] (2014-2016).
2. Member of **American Physical Society** [APS] (2010-2012).
3. Member of **Institute of Physics** [IOP] (2009-2012).
4. Appointed PhD Thesis Examinar of Department of Physics, **University of Gujrat,** Gujrat, Pakistan**.**
5. M.Sc Thesis Examinar of Department of Physics, **Mawlana Bhashani Science and Technology University [MBSTU],** Tangail, Bangladesh.
6. **M. Phil Thesis Examinar,** National University, Gazipur, Bangladesh.

Personal Information:

Current Postal Address:

Department of Physics, Jagannath University, Dhaka 1100, Bangladesh.

Date of Birth: 22nd June 1982

Nationality : Bangladeshi.

References:

1. Professor Dr. Ain-ul Huda, Chairman. Department of Physics, Jagannath University, Dhaka, Bangladesh.

2. Professor Marco Borghesi

International Centre for Experimental Physics, School of Mathematics and Physics,
Queen's University Belfast, United Kingdom, Phone: +44-28-90973516, Fax: +44-28-90873110
m.borghesi@qub.ac.uk