

Muhammad Abdul Kadir, PhD

Professor Department of Biomedical Physics & Technology University of Dhaka Dhaka 1000, Bangladesh Cell: 01728043205 Email: kadir@du.ac.bd https://du.ac.bd/faculty/faculty_details/BIOPHY/78



CURRICULUM VITAE

Education and Degrees:	B.Sc. (Honors) in Physics, University of Dhaka, Bangladesh, 2006
	M.Sc. in Physics, University of Dhaka, Bangladesh, 2008
	Ph.D. in Biomedical Physics, University of Dhaka, Bangladesh and University of Warwick, United Kingdom, 2018
Employment:	Aug 2018 – Present: Professor, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
	Dec 2018 – Aug 2023: Associate Professor, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
	Jun 2014 – Dec 2018: Assistant Professor, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
	Jul 2010 – Jun 2014: Lecturer, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
	Oct 2008 – Jun 2010: Lecturer, Department of Arts & Sciences, Ahsanullah University of Science & Technology, Dhaka, Bangladesh
Research Interest:	Bioelectrical Impedance and its medical applications, Biomedical Instrumentation, Simulation and Modelling, Medical Imaging, Biomedical signal & image analysis and machine learning techniques.
Teaching:	Biophysics, Bioelectricity and Bioimpedance, Medical Radiation Physics. Medical Imaging Methods.
Honors and Awards:	Commonwealth Scholarship-2011, Split-site PhD program at the University of Warwick, UK awarded by the Commonwealth Scholarship Commission in the United Kingdom
	Dhaka University Scholarship-2006 based on the results of B.Sc. (Honors) Examination
	Best Article Award, Telehealth and Medicine Today, 2021
Professional	
Membership:	Life Member: Bangladesh Medical Physics Association (BMPA)
	Life Member: Bangladesh Physical Society (BPhS)
	Member, IEEE Engineering in Medicine and Biology Society (EMBS), 2024
	Life Member: Bangladesh Association for the Advancement of Science (BAAS)

Journal Articles

- Safia Aktar Dipa, Muralee Monohara Pramanik, Mamun Rabbani, and Muhammad Abdul Kadir, (2024) Effects of temperature on electrical impedance of biological tissues: ex-vivo measurements. *Journal of electrical bioimpedance*, 15(1), pp.116-124. https://doi.org/10.2478/joeb-2024-0013
- Afroza Naznin, Muhammad Abdul Kadir, Fatima Begum and Khondkar Siddique-e Rabbani, (2024) Comparative Performance of Low-Cost Portable Scanner in Pregnancy Profile Ultrasonography: A Promising Adjunct to Telemedicine, *Global Clinical Engineering Journal*, vol.6, no.3, pp.26-36. <u>https://doi.org/10.31354/globalce.v6i3.200</u>
- 3. Md Amimul Ihsan, Abrar Faiaz Eram, Lutfun Nahar and Muhammad Abdul Kadir, (2024) MediSign: An Attention-Based CNN-BiLSTM Approach of Classifying Word Level Signs for Patient-Doctor Interaction in Hearing Impaired Community, *IEEE Access*, vol.12 IEEE, pp.33803 - 33815. <u>https://doi.org/10.1109/ACCESS.2024.3370684</u>
- 4. Kanchon Kanti Podder, Maymouna Ezeddin, Muhammad EH Chowdhury, Md Shaheenur Islam Sumon, Anas M Tahir, Mohamed Arselene Ayari, Proma Dutta, Kh, Amith akar, Zaid Bin Mahbub and Muhammad Abdul Kadir, (2023) Signer-Independent Arabic Sign Language Recognition System Using Deep Learning Model, *Sensors*, vol.23, no.16, pp.7156. https://doi.org/10.3390/s23167156
- 5. Md Mozzammel Haque, Muhammad Abdul Kadir and Richard Bayford, (2023) Thermodynamics of mechanopeptide sidechains, AIP Advances, vol.13, no.8, 085023. AIP Publishing <u>https://doi.org/10.1063/5.0154129</u>
- Sadeque Reza Khan, Xiaohan Wang, Tiantao Jiang, Wei Ju, Norbert Radacsi, Muhammad Abdul Kadir, (2023) Khondkar Siddique-e Rabbani, Steve Cunningham and Srinjoy Mitra, Multi-Modal Portable Respiratory Rate Monitoring Device for Childhood Pneumonia Detection, *Micromachines* 14(4), 708. doi: <u>https://doi.org/10.3390/mi14040708</u> (IF: 3.523)
- Mahjabin Mobarak, Muhammad Abdul Kadir, (2022) K Siddique-e Rabbani, Probing deep lung regions using a new 6-electrode tetrapolar impedance method, *Journal of Electrical Bioimpedance*, vol. 13(1), pp.116-124. doi: <u>https://doi.org/10.2478/joeb-2022-0016</u>
- Arafat Rahman, Muhammad E.H. Chowdhury, Amith Khadakar, Anas M. Tahir, Nabil Ibtehaz, Md Shafayet Hossain, Serkan Kiranyaz, Junaid Malik, Haya Monawwar and Muhammad Abdul Kadir, (2022) Robust biometric system using session invariant multimodal EEG and keystroke dynamics by the ensemble of self-ONNs, *Computers in Biology and Medicine*, vol.142, pp.105238. <u>https://doi.org/10.1016/j.compbiomed.2022.105238</u>
- 9. Kanchon Kanti Podder, Muhammad E. H. Chowdhury, Anas M. Tahir, Zaid Bin Mahbub, Amith Khandakar, Md Shafayet Hossain and Muhammad Abdul Kadir, (2022) Bangla Sign Language (BdSL) Alphabets and Numerals Classification Using a Deep Learning Model, *Sensors (Basel, Switzerland)*, vol.22, no.2, pp.574 (1-18), 2022. <u>https://doi.org/10.3390/s22020574</u>
- Muhammad Abdul Kadir, Adrian J Wilson and K Siddique-e Rabbani, (2021) A multi-frequency focused impedance measurement system based on analogue synchronous peak detection, *Front. Electron. Bioelectronics*, vol.2, p.791016. doi: <u>https://doi.org/10.3389/felec.2021.791016</u>
- 11. Ferdous Karim Lucy, Khadiza Tun Suha, Sumaiya Tabassum Dipty, Md Sharjis Ibne Wadud and Muhammad Abdul Kadir, (2021) Video based non-contact monitoring of respiratory rate and chest indrawing in children with pneumonia, *Physiological Measurement*, vol.42, no.10 IOP, p.105017. doi: <u>https://doi.org/10.1088/1361-6579/ac34eb</u> (IOP Publishing)

- 12. Arafat Rahman, Chowdhury, M.E., Khandakar, A., Kiranyaz, S., Zaman, K.S., Reaz, M.B.I., Islam, M.T., Ezeddin, M. and Muhammad Abdul Kadir, (2021) Multimodal EEG and Keystroke Dynamics Based Biometric System Using Machine Learning Algorithms. *IEEE Access*, 9, pp.94625-94643, 2021. doi: <u>https://doi.org/10.1109/ACCESS.2021.3092840</u> (IEEE Publishing)
- 13. Tawsifur Rahman, Amith Khandakar, Muhammad Abdul Kadir, Khandaker R. Islam, Khandaker F. Islam, Rashid Mazhar, Tahir Hamid, Mohammad T. Islam, Saad Kashem, Zaid B. Mahbub, Mohamed Arselene Ayari and Muhammad E. H. Chowdhury, Reliable Tuberculosis Detection using Chest X-ray with Deep Learning, Segmentation and Visualization, *IEEE Access*, vol.8, pp.191586-191601, 2020 doi: <u>https://doi.org/10.1109/ACCESS.2020.3031384</u> (IEEE Publishing)
- 14. Muhammad E. H. Chowdhury, Tawsifur Rahman, Amith Khandakar, Rashid Mazhar, Muhammad Abdul Kadir, Zaid Bin Mahbub, Khandakar R. Islam, Muhammad Salman Khan, Atif Iqbal, Nasser Al-Emadi, Mamun Bin Ibne Reaz and M. T. Islam, (2020) Can AI help in screening Viral and COVID-19 pneumonia?, *IEEE Access*, vol.8, pp.132665-132676. doi: https://doi.org/10.1109/ACCESS.2020.3010287 (IEEE Publishing)
- 15. Kanchon Kanti Podder, Muhammad E. H. Chowdhury, Zaid Bin Mahbub and Muhammad Abdul Kadir, ()2020 Bangla Sign Language Alphabet Recognition Using Transfer Learning Based Convolutional Neural Network, *Bangladesh Journal of Scientific Research*, vol.31-33, no.1, pp.20-26.
- 16. Tawsifur Rahman, Muhammad E. H. Chowdhury, Amith Khandakar, Khandaker R. Islam, Khandaker F. Islam, Zaid B. Mahbub, Muhammad A. Kadir and Saad Kashem (2020) Transfer learning with deep convolutional neural network (cnn) for pneumonia detection using chest x-ray, *Applied Sciences*, 2020, 10 (9), 3233 doi: <u>https://doi.org/10.3390/app10093233</u>
- 17. Muhammad Abdul Kadir (2020) Role of telemedicine in healthcare during COVID-19 pandemic in developing countries, Telehealth and Medicine Today, 5(2) doi: https://doi.org/10.30953/tmt.v5.187 (Partners in Digital Health publishing)
- 18. Rashida Haque, Muhammad Abdul Kadir and K Siddique-e Rabbani (2019) Probing for stomach using the Focused Impedance Method (FIM), *J Electr Bioimp*, vol. 10(1), pp.73-82, doi: <u>https://doi.org/10.2478/joeb-2019-0011</u> (Sciendo, De Gruyter Publishing)
- 19. Shamor Kanti Roy, Mohammad Abu Sayem Karal, Muhammad Abdul Kadir, Khondkar Siddique-e Rabbani (2019) A new six-electrode electrical impedance technique for probing deep organs in the human body, *European Biophysics Journal*, 48 (8), pp.711-719, doi: <u>https://doi.org/10.1007/s00249-019-01396-x</u> (Springer International Publishing)
- **20.** M Abdul Kadir and K S Rabbani (2018) Use of a conical conducting layer with an electrical impedance probe to enhance sensitivity in epithelial tissues. *J Electr Bioimp*, vol.**9**(1), pp.176-183, doi: <u>https://doi.org/10.2478/joeb-2018-0022</u> (Sciendo, De Gruyter Publishing)
- 21. M Ohiduzzaman, R Khatun, S Reza, M A Kadir, S Akter, M F Uddin, M A Rahman, R Mallick, M A Samad, M M Billah, M M Ahasan (2019) Thyroid Uptake of Tc-99m and Its Agreement with I-131 for Evaluation of Hyperthyroid Function, *Univers J Public Health*, 7(5): 201-206, doi: https://doi.org/10.13189/ujph.2019.070502
- **22.** M. A. Ali, **M Abdul Kadir**, K Siddique-e Rabbani (2016) Development of an electrical impedance based spirometer, *Bangladesh Journal of Medical Physics*, **9**(1):17-27, doi: <u>https://doi.org/10.3329/bjmp.v9i1.37304</u>
- **23.** M Abdul Kadir, T. N. Baig, K Siddique-e Rabbani (2015) Focused Impedance Method (FIM) to detect localized lung ventilation disorders in combination with conventional spirometry, *Biomed.*

Eng. Appl. Basis Commun. 27(3):1550029, 2015, doi: <u>10.4015/S1016237215500295</u> (World Scientific Publishing)

- 24. S. P. Ahmed, M Abdul Kadir, Golam Dastegir Al Quaderi, Rubina Rahman and K Siddique e Rabbani (2015) Improved Understanding of the Sensitivity of Linear Tetrapolar Impedance Measurement (TPIM) and 8-Electrode Focused Impedance Method (FIM) in a Volume Conductor, *Bangladesh Journal of Medical Physics*, 8(1):22-31, doi: 10.3329/bjmp.v8i1.33931
- 25. Abdullah Al Amin, Shahnaj Parvin, M Abdul Kadir, Tasmia Tahmid, S Alam and K S Rabbani (2014) Classification of breast tumour using electrical impedance and machine learning techniques, *Physiol Meas* 35(6):965, doi:10.1088/0967-3334/35/6/965 (IOP Publishing, UK)
- 26. S. P. Ahmed, M Abdul Kadir, Rubina Rahman, Golam Dastegir Al-Quaderi and K Siddique-e Rabbani (2014) Determination of organ volume using Focused Impedance Method (FIM): a simulation approach, *Bangladesh Journal of Medical Physics*, 7(1): 24-33, doi: <u>10.3329/bjmp.v7i1.25256</u>
- 27. K Siddique-e Rabbani and M Abdul Kadir (2011) Possible applications of Focused Impedance Method (FIM) in biomedical and other areas of study, *Bangladesh Journal of Medical Physics*, 4(1):67-74, doi:<u>http://dx.doi.org/10.3329/bjmp.v4i1.14689</u>
- 28. M Abdul Kadir, Humyra Ferdous, Tanvir Noor Baig and K Siddique-e Rabbani (2010) Ventilation mapping of chest using Focused Impedance Method (FIM), J. Phys.: Conf. Ser. 224(1):012031, doi:10.1088/1742-6596/224/1/012031 (IOP Publishing, UK)

Conference Proceedings paper

- Chitra Roy, Md. Sohag Ali, Md. Tushar Abdullah, Md. Ibrahim Al Imran and Muhammad Abdul Kadir, Enhancement of Sensitivity in Electrical Bioimpedance Measurements Using Contrast Agents, 2024 6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT), Dhaka, Bangladesh, 02-04 May 2024. https://doi.org/10.1109/ICEEICT62016.2024.10534408
- Bikash Kumar Bhawmick, Muhammad Abdul Kadir and Khondkar Siddique-e Rabbani, Switching Algorithm and Data Acquisition for Pigeon Hole Imaging System, *International Conference on Electronics, Communications and Information Technology (ICECIT)*, pp. 1-5. Khulna, Bangadesh: IEEE, 2021. <u>https://doi.org/10.1109/ICECIT54077.2021.9641191</u>
- R. Z. Rusho, M Abdul Kadir (2017) Subcutaneous Vein Detection Using Pigeon Hole Imaging: Simulation Study, Proceedings: The 5th IEEE Region 10 (Asia Pacific) Humanitarian Technology Conference (R10HTC), 21-23 December, 2017, Dhaka, Bangladesh, doi: 10.1109/R10-HTC.2017.8288975 (IEEE Publishing).
- R. Z. Rusho, M Abdul Kadir, (2017) Reconstruction Algorithm for Pigeon Hole Imaging (PHI), *Proceedings: The 3rd International Conference on Electrical Information and Communication Technology (EICT)*, 7-9 December 2017, KUET, Khulna, Bangladesh, doi: <u>10.1109/EICT.2017.8275137</u> (IEEE Publishing).
- M. T. Rahman, M Abdul Kadir, A.H.M. Zadidul Karim, Md. Abdullah Al Mahmud (2017) Respiration monitoring by using ECG, *Proceedings: The 20th International Conference on Computer and Information Technology (ICCIT 2017)*, 22-24 December, 2017, Dhaka, Bangladesh, doi: 10.1109/ICCITECHN.2017.8281762 (IEEE Publishing).
- 6. M Abdul Kadir, S P Ahmed, G D Al Quaderi, R Rahman, K S Rabbani (2013) Application of the Focused Impedance Method (FIM) to determine the volume of an object within a volume

conductor, *Proceedings (on-line) COMSOL Conference, Bangalore, India, 17-18 September,* 2013 Available: <u>http://www.comsol.com/paper/download/182751/kadir_paper.pdf</u>

- M Abdul Kadir, K Siddique-e Rabbani and Adrian J Wilson (2012) Development of a multifrequency system for medical applications of focused electrical impedance method (FIM) appropriate for developing countries, *Proceedings: The 7th International Conference on Appropriate Healthcare Technologies for Developing Countries - AHT2012, London, UK*, 2012(608CP):1-6. doi:10.1049/cp.2012.1487 (*IET, UK*).
- 8. M Abdul Kadir, Tanvir Noor Baig and K Siddique-e Rabbani, Application of 6-electrode Focused Impedance Method (FIM) to study lungs ventilation, *10th International Conference on Electrical Impedance Tomography* Manchester, UK, 15–19 June 2009.

Workshop/International Events

- 1. Participated in *the Third Hope Meeting with Nobel Laureates*, Organized by the *Japan Society for the Promotion of Science (JSPS)*, March 7-11, 2011, Tokyo, Japan.
- 2. Participated in *the Workshop on Advanced Reconfigurable Instrumentation for Scientific Applications*, Organized by *the Abdus Salam International Centre for Theoretical Physics (ICTP)*, Bangi, Selangor, Malaysia, November 14-25, 2016.
- 3. Participated in *the ICTP-UNU Workshop on TinyML for Sustainable Development*, Organized by *the Abdus Salam International Centre for Theoretical Physics (ICTP) and United Nations University*, Macao, China, April 26-30, 2024.
- 4. Participated in the College on Medical Physics 2024: Medical Imaging Physics Enhancing the capability of medical physics in the Developing Countries to contribute to more effective and safer diagnostic medical imaging procedures of the population, Organized by the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, September 9-27, 2024.

Invited Talk

- 1. Muhammad Abdul Kadir, Solar Water Pasteurization System: Design Optimization for Enhanced Heating, *International Conference on Physics for Sustainable Energy (ICPSE-2023)*, Nepal Physical Society (NPS) and International Union of Pure and Applied Physics (IUPAP), Lalitpur, Nepal, 22-23 September 2023.
- 2. Muhammad Abdul Kadir, Physics and Engineering in Medicine: Spotlight on Electrical Bioimpedance, *Workshop on Biophysics: Exploring Biophysics: From Physical Principle to Technological Advancement*, Organized by: Department of Physics, BUET, 28 June 2024.

Conference Abstracts/Presentations

- Mahi Uddin, Manish Debnath, Hasan Mehdi, Md. Shohag Mia, Md. Nahid Hossain, Shahadat Hossain and Muhammad Abdul Kadir, Investigation of Radionuclides Induced within Vault Room Shielding Exposed to Neutron Radiation during F-18 Production via Cyclotron, *International Conference on Physics*, 9 – 11 May 2024, Dhaka, Bangladesh.
- 2. Sohag Ali, Muttakee Bin Ali, Chitra Roy, Md. Ibrahim Al Imran, Muhammad Abdul Kadir, Pulsed Electromagnetic Field Induced Changes in Electrical Properties of Biological Tissues, *International Conference on Physics*, 9 11 May 2024, Dhaka, Bangladesh.

- 3. N.M. Tawsifur Rahman, Muhammad E. H. Chowdhury, Zaid Bin Mahbub and Muhammad Abdul Kadir, Driver drowsiness detection by heart rate variability (HRV) analysis using machine-learning algorithm, , International Conference on Physics in Medicine (ICPM), 6-7 February 2020, Dhaka, Bangladesh.
- 4. Umme Marium Mim, Muhammad Abdul Kadir, and K siddique-e Rabbani, A novel electrode configuration for characterization of cervical tissue using impedance spectroscopy, *International Conference on Physics in Medicine (ICPM)*, 6-7 February 2020, Dhaka, Bangladesh.
- 5. Sadia Afrin, Muhammad Abdul Kadir, Estimation of Blood Pressure from PPG: Towards Cuff-less Measurement, *International Conference on Physics in Medicine (ICPM)*, 6-7 February 2020, Dhaka, Bangladesh.
- 6. Shamor Kanti Roy, Mohammad Abu Sayem Karal, K Siddique-e-Rabbani and Muhammad Abdul Kadir, Probing Deep Tissue Organ by Electrical ImpedanceTechnique, International Conference on Nanotechnology and Condensed Matter Physics, 11-12 January, 2018, Dhaka, Bangladesh.
- 7. Bikash Kumar Bhawmick, Muhammad Abdul Kadir, K Siddique-e Rabbani, Switching Algorithm and Data Acquisition for Pigeon Hole Imaging System, *Second International Conference on Advances in Electrical, Electronic and System Engineering (ICAEESE-2019), 2-3 November 2019, Guwahati, India.*
- Muhammad Abdul Kadir and K. S. Rabbani, Use of conical bolus in electrical impedance measurements to enhance sensitivity in epithelial tissues, National Conference on Physics, 7-9 February 2019, Dhaka Bangladesh.
- Shahnaj Parvin, Ahamad Imtiaz Khan, Kamrul Hossain, Muhammad Abdul Kadir and K Siddiquee Rabbani, An electrical impedance based neonatal respiration monitor for pneumonia detection, *Second WHO Global Forum on Medical Devices*, 22-24 November 2013, Geneva, Switzerland.
- 10. Abdullah Al-Amin, Shahnaj Parvin, Muhammad Abdul Kadir, Tasmia Tahmid, S Kaisar Alam, K Siddique-e Rabbani, Classification of breast tumour using electrical impedance, *XVth International Conference on Electrical Bio-Impedance (ICEBI) and the XIVth Conference on Electrical Impedance Tomography-EIT*, 22-25 April 2013, Heilbad Heiligenstadt, Germany.
- 11. Muhammad Abdul Kadir, K S Rabbani, Adrian J Wilson, Instrumentation for Multi-frequency Focused Impedance Measurements, *International Conference on Physics in Medicine and Clinical Neuro Electrophysiology (PMCN-2017)*, 10-11 March, 2017, Dhaka, Bangladesh.
- 12. K Siddique-e Rabbani, Muhammad Abdul Kadir, Innovative technology for safe drinking water for rural areas using free sun and rain, *Innovation Exhibition*, 40th *IDB Group Annual Meeting*, 6-11 June 2015, Maputo, Mozambique.
- Shariful Islam, Muhammad Abdul Kadir and K Siddique-e Rabbani, Optimum electrode configuration to study the human kidneys using electrical impedance techniques: a simulation study, *International Conference on Physics in Medicine and Clinical Neuroelectrophysiology*, 19-20 February 2015, Dhaka, Bangladesh.
- 14. Susmita Afruz, Muhammad Abdul Kadir and K Siddique-e Rabbani, Investigation of X-ray Image Quality in Telemedicine, *International Conference on Physics in Medicine and Clinical Neuroelectrophysiology*, 19-20 February 2015, Dhaka, Bangladesh.
- 15. Muhammad Abdul Kadir and K Siddique-e Rabbani, A Finite Element Model of the Thorax to Investigate Fluid Accumulation in Lungs using Focused Impedance Method, *International Conference on Physics for Energy and Environment*, 06-08 March, 2014, Dhaka Bangladesh.
- 16. Muhammad Abdul Kadir, S Akram Hussain, Rakhi Zabin, S Kaiser Alam and K Siddique-e Rabbani, Breast tumour characterization using dual frequency FIM, *International Science Seminar*

on the occasion of Diamond Jubilee Celebration of the Asiatic Society of Bangladesh 1952-2012, Dhaka, October 28-29, 2011.

- 17. Sultana Yeasmin, Muhammad Abdul Kadir, K Siddique-e Rabbani, Cervical Cancer detection using Focused Impedance Method (FIM), *International Science Seminar on the occasion of Diamond Jubilee Celebration of the Asiatic Society of Bangladesh 1952-2012*, Dhaka, October 28-29, 2011).
- 18. Muhammad Abdul Kadir and K Siddique-e Rabbani, Development of a dual frequency system of Focused Impedance Method (FIM) for medical diagnosis, *Regional Conference on Medical Physics, February 18, 2011, Dhaka, Bangladesh.*
- 19. Muhammad Abdul Kadir and K Siddique-e Rabbani, Development of a dual frequency measurement system of Focused Impedance Method (FIM) to study cervical cancer, *International Conference on Recent Advances in Physics (RAP-2010), March 27-29, 2010, Dhaka, Bangladesh.*
- 20. Humyra Ferdous, Muhammad Abdul Kadir, Tanvir Noor Baig and K Siddique-e Rabbani, Application of Focused Impedance Method (FIM) in the mapping of localized lung ventilation using a spring loaded electrode system, *International Conference on Recent Advances in Physics (RAP-2010), March 27-29, 2010, Dhaka, Bangladesh.*
- 21. Muhammad Abdul Kadir, Tanvir Noor Baig and K S Rabbani, Potential of a novel Focused Impedance Measurement (FIM) technique in lungs ventilation study, *International Physics Conference, May 15-17, 2009, Dhaka, Bangladesh*
- 22. Muhammad Abdul Kadir, Tanvir Noor Baig and K S Rabbani, Application of 6-electrode Focused Impedance Measurement (FIM) technique to study lungs ventilation, *Bose Conference on Contemporary Physics*, 19-21 March 2008, Dhaka, Bangladesh.
- 23. Muhammad Abdul Kadir, T N Baig and K S Rabbani, Application of 6-electrode Focused Impedance Method (FIM) to study lungs ventilation, *10th International Conference on Biomedical Applications of Electrical Impedance Tomography-EIT*, *15–19 June 2009*, Manchester, UK.