

Farseem M. Mohammedy

Assistant Professor • Electrical and Electronic Engineering

• Bangladesh University of Engineering and Technology (B.U.E.T.), Dhaka •

• Tel: 88-02-8614640-44,ext.7864 (Off), 01715-044474 (cell) •

farseem@eee.buet.ac.bd, farseemm@yahoo.com

<http://teacher.buet.ac.bd/farseem>

Education

- | | |
|-------|---|
| Ph.D. | 2008, McMaster University, Hamilton, Ontario, Canada.
Electrical Engineering. |
| M.Sc. | 2002, Bangladesh University of Engineering & Technology (BUET),
Electrical & Electronic Engineering. |
| B.Sc. | 1999, Bangladesh University of Engineering & Technology (BUET),
Electrical & Electronic Engineering. |
-

Teaching Experience

- August 2002 to date, **Assistant Professor**, Dept of Electrical and Electronic Engineering, Bangladesh University of Engineering & Technology (BUET).
- January '06 – April '07, **Teaching Assistant**, Dept of ECE, McMaster University.
- January 2000 to August 2002, **Lecturer**, Dept of EEE, BUET.

Teaching interest: Solid-state optoelectronic devices, photonics, processing and fabrication, nanotechnology, engineering electromagnetics, microwave engineering.

Research Experience

- Sept 2002 – Aug 2008**, Graduate Research Assistant, Dept of Electrical and Computer Engineering, McMaster University, Hamilton, Ontario, Canada.
- 2002 – 2008**, Doctoral project, Dept of Electrical and Computer Engineering, McMaster University, Canada.
 - Experienced with Molecular Beam Epitaxy of III-V semiconductors, particularly GaSb based materials, characterization techniques (x-ray analysis, photoluminescence)
 - Fabrication processes (photolithography, wet chemical etching, reactive ion etching and deposition techniques).
 - Specializing on metamorphic growth, characterization of GaAsSb, InGaSb ternaries and fabrication of mid-IR photodetectors.

- Title: "Growth, Fabrication and Characterization of Metamorphic InGaSb Photodetectors for Applications in 2.0 μm and Beyond."
 - Jointly supervised by Dr. M. Jamal Deen, Professor, Dept of ECE, and Dr. David A. Thompson, Professor, Dept of Engineering Physics, McMaster University.
- c. **2000 – 2002**, Dept of EEE, Bangladesh University of Engineering and Technology.
- Semi-analytical modeling of base transit time of a BJT.
 - M.Sc. Thesis titled "A distribute transmission line model for the base transit time of a nonuniformly doped bipolar junction transistor". Supervisor: Dr. M.M. Shahidul Hassan, Professor, Dept of EEE, BUET.
- d. **Research interest:** Do active research in the field of optoelectronics leading to nanoelectronic and photonic applications, MBE growth and fabrication of semiconductors, physics of semiconductor devices.
-

Conference Reviewer

- a. Invited reviewer for IEEE International Symposium on Circuits and Systems (**ISCAS 2010**), Paris, May 30th – 2nd June 2010. (<http://www.iscas2010.org/>)
 - b. Invited reviewer for the International Conference on Computers and Devices for Communication (**CODEC-2009**), Kolkata, 2009.
 - c. Invited reviewer for 12th International Symposium on Integrated Circuits (**ISIC-2009**), Singapore, 14-16 December 2009. (<http://www.isic2009.org/default.asp>)
-

Conferences/Workshops Attended

- a. 12th Canadian Semiconductor Technology Conference, Ottawa, Canada, 17-20 August, 2005. Oral presentation.
 - b. CIPI Workshop on Photon Counting, Ecole Polytechnique de Montreal, Montreal, Canada, 25-26 May 2004.
 - c. International Conference on Computers and Devices for Communication (CODEC), Kolkata, India, 1-3 January, 2004. Oral presentation.
-

Professional experiences

- a. Member of the committee to oversee the switchover of the national broadcasting television from analog to digital – a project under the Ministry of Information, Govt. of Bangladesh.
 - b. Members of several other governmental committees overseeing several important technical projects of national importance.
 - c. Served as engineering consultant for various research and consultancy jobs related to electrical engineering under the Bureau of Research, Testing and Consultancy, BUET.
-

Referees

- a. **Prof. M. Jamal Deen**, Dept of Electrical Engineering, McMaster University, jamal@mcmaster.ca.

- b. **Prof. D. A. Thompson**, Dept of Engineering Physics, McMaster University,
dathomp@mcmaster.ca.
 - c. **Prof. M. M. Shahidul Hassan**, Professor, Dept of Electrical & Electronic Engineering,
Bangladesh University of Engineering and Technology.
-

Professional Publications

Invited Review

- [1]. F. M. Mohammady, and M. J. Deen “Growth and fabrication issues of GaSb-based detectors,” *Journal of Material Science: Mater Electron*, **20**, p.1039–1058, (2009).

Refereed Journals

- [2]. F. M. Mohammady, M. J. Deen and D. A. Thompson “Extraction of electron and hole ionization coefficients from metamorphically grown InGaSb diodes,” *IEEE Transactions Electron Devices*, to be published in March (2009).
- [3]. F. M. Mohammady, O. Hulko, B. J. Robinson, D. A. Thompson and M. J. Deen, “Effect of growth temperature on InGaSb metamorphic layers and the fabrication of InGaSb p-i-n diodes,” *Journal of Vacuum Science and Technology B*, Vol 26, No. 2, p.636-642, (2008).
- [4]. F.M. Mohammady, Z.L. Peng, D.A. Thompson, M.J. Deen, “RIE of GaSb with an ECR source using methane/hydrogen chemistry in an argon plasma,” *J. Electrochem.Soc.*, 154, p.H127-130, (2007).
- [5]. F.M. Mohammady, O. Hulko, B.J. Robinson, D.A. Thompson, M.J. Deen, J.G. Simmons, “Growth and Characterization of GaAsSb Metamorphic Samples on an InP substrate”, *J. Vac. Sci. Technol.*, A 24, 587 (2006).

Refereed Conferences

- [1]. Vashwar Tajdidur Rouf, Wasim Hussain, and Farseem M. Mohammady, “Analysis of noise performance and its temperature dependence for an $\text{In}_{0.10}\text{Ga}_{0.90}\text{Sb}$ avalanche photodiode”(OLT-5408), International Conference on Computers and Devices for Communication – *CODEC 2009*, Kolkata, India.
- [2]. M. Q. Huda, A. A. I. Ahmed, S. U. Omar, M. S. Mahmood and F. M. Mohammady, “Modeling of erbium Segregation during Solid Phase Epitaxial Re-crystallization in Silicon”(EDM-3511), International Conference on Computers and Devices for Communication – *CODEC 2009*, Kolkata, India.
- [3]. M. Q. Huda, S. Saha , M.S. Akter , M.T. Hasan, S. Subrina and F. M. Mohammady, “Erbium Doped Silicon Nanocrystal for Optical Amplification and Lasing (OLT-5956),” International Conference on Computers and Devices for Communication – *CODEC 2009*, Kolkata, India.
- [4]. Mohammady, F. M. and M. M. Shahidul Hassan, “A transmission line model for the base transit time of a nonuniformly doped bipolar junction transistor”, International Conference on Computers and Devices for Communication – *CODEC 2004*, Kolkata, India.
- [5]. Mohammady, F. M. and M. M. Shahidul Hassan, “A distributed transmission line model for the base transit time of a nonuniformly doped bipolar junction transistor”, Second International Conference on Electrical and Computer Engineering – *ICECE 2002*, pp. 132-135, 26-28 December 2002, Dhaka, Bangladesh, ISBN-984-32-0328-3.

Refereed Presentations

- [1]. Mohammady et al., 12th Canadian Semiconductor Technology Conf. (CSTC’05), Ottawa, Ontario, Canada, Aug. 2005.
- [2]. Mohammady et al., International Conference on Computers and Devices for Communication – *CODEC 2004*, Kolkata, India, Jan 2004.

Non-refereed Presentations

- [1]. Farseem M. Mohammady, Fourth PhD Supervisory Committee Meeting, McMaster University, Hamilton, Ontario, Canada, Mar 2008.

- [2]. Farseem M. Mohammedy, Centre for Emerging Device Technologies (CEDT) Presentation, McMaster University, Hamilton, Ontario, Canada, Jan 2007.
- [3]. Farseem M. Mohammedy, Centre for Electro-optic Materials and Devices (CEMD) Presentation, McMaster University, Hamilton, Ontario, Canada, 5th Mar 2004.

Contributor

- [1]. Farseem M. Mohammedy, Ontario Photonics Consortium (OPC06), University of Western Ontario, London, Canada, 25 May 2006.
- [2]. Farseem M. Mohammedy, Ontario Photonics Consortium (OPC05), McMaster University, Hamilton, Canada, May 2005.
- [3]. Farseem M. Mohammedy, Department of Electrical and Computer Engineering, McMaster University, Hamilton, Canada, 2005.
- [4]. Farseem M. Mohammedy, Department of Electrical and Computer Engineering, McMaster University, Hamilton, Canada, 2004.

Amateur Writings in Bengali

Material published

Books

1. **Nano in Bengali** (“ন্যানো”) - Farseem M Mohammedy; published by *Porua*, Aziz Market, Dhaka, February 2010. A coffee-table book on nanotechnology for the layman.
2. **A Riddle in Math and the Story of My Second-Uncle in Bengali** (“অংকের হেঁয়ালি ও আমার মেজোকাকুর গল্প”) - Farseem M Mohammedy; published by *Somoy Prokashon*, February 2007. ISBN 984-458-587-2
3. **Features of the Deep Sky in Bengali** (“মহাকাশের কথা”) - Farseem M Mohammedy; published by *Anupom Publishers*, February 2001. ISBN 984-404-169-4
4. **Introduction to Astrophysics in Bengali** (“জ্যোতিঃপদার্থবিজ্ঞান পরিচিতি”) - Farseem M Mohammedy; published by *Bangla Academy*, February 2000. ISBN 984-07-4019-9
5. **Dictionary of Astronomy in Bengali** (“জ্যোতির্বিজ্ঞান শব্দকোষ”) - Farseem M Mohammedy; published by *Bangla Academy*, February 1998. ISBN 984-07-3729-5
6. *Farseem M Mohammedy* is one of the contributing-compilers of the **বাংলা একাডেমী বিজ্ঞান বিশ্বকোষ** (*Bangla Academy Science Encyclopedia* in Bengali) a massive five-volume undertaking of *Bangla Academy*.

Papers

- *Bengal in Twentieth Century : Science and Technology* (“বিশ শতকের বাংলা : বিজ্ঞান ও প্রযুক্তি”) – Farseem M Mohammedy, **Journal of Institute of Bangladesh Studies**, Rajshahi University, 2009.
- *On the Formation of Large-scale Structure in the Universe* (“মহাবিশ্বে ব্যাপক কাঠামোর উদ্ভব”) - Farseem M Mohammedy, **Bangla Academy Bijnan Potrika**¹, vol. 62, 1999.
- *The Ultimate Fate of the Universe* (“বিশ্বের অন্তিম নিয়তি”) - Farseem M Mohammedy, **Bangla Academy Bijnan Potrika**, vol. 60, 1998.
- *The Inside of Stars* (“নক্ষত্রের গর্ভ থেকে”) - Farseem M Mohammedy, **Bangla Academy Bijnan Potrika**, vol. 53, 1994.
- *The First Few Minutes of Creation* (“সৃষ্টির মাহেন্দ্র ঝঞ্জে”) - Farseem M Mohammedy, **Bangla Academy Bijnan Potrika**, vol. 58, 1997.
- *Is the End in Sight for Theoretical Physics?* - Stephen W. Hawking, translated by Farseem M Mohammedy into Bengali, (“তাত্ত্বিক পদার্থবিজ্ঞানের পরিসমাপ্তি কি গোচরীভূত?”) **Bangla Academy Bijnan Potrika**, vol. 52, 1993.
- *The Milky Way Galaxy* (“আকাশগঙ্গা ছায়াপথ”) - Farseem M Mohammedy, **Purogami Bijnan**², 13th year, 1st-2nd-3rd & 4th volume, 1403 (Bengali era).
- *Extra-Galactic Astronomy* (“ওই যে সুদূর নীহারিকা”) - Farseem M Mohammedy, **Purogami Bijnan**, 14th year, 1st-to-4th volume, 1404 (Bengali era).

¹ *Bangla Academy Bijnan Potrika* is a half-yearly science journal in Bengali, published by *Bangla Academy* – a national institute of Bangladesh for the promotion and development of Bengali culture and language.

² *Purogami Bijnan* is a quarterly science journal in Bengali, Published by the Bangladesh Council of Scientific and Industrial Research (BCSIR).

Besides ↗

- *Farseem M Mohammedy* has also written numerous articles on popular science, particularly on astronomy, on different newspapers and magazines, such as Prothom Alo, Bhorer Kagoj, Janokantho, Jai Jai Din, the Bangladesh Observer, Mohakash Barta, Bigganer Joyjatra etc.
- He is the coordinator of the Abdul Jabbar Astronomy Workshop.
- He regularly attends the Bangladesh Math Olympiad programs
- Read his interview on *the Daily Amader Shomoy*, 26 May 2009.
- View his article on “Quantum Cosmology” on the web, thanks to his friend Jamshidur Rahman: <http://geocities.com/babuntu/science1.htm#QUANTUM>.