

Curriculum Vitae

1. **Name:** Md. Shahjahan
2. **Father's Name:** Md. Badiar Rahman
3. **Mother's Name:** Mst. Suraiya Begum
4. **Date of Birth:** 16th August, 1973, **Sex:** Male
5. **Nationality:** Bangali
6. **Place of Birth (City & Country):** Gaibandha, Bangladesh
7. **Marital Status:** Married
8. **Present status, Name and Address of Present Institution**

Professor

Department of Electronics and Telecommunication Engineering

Bangabandhu Sheikh Mujibur Rahman Science and Technology University

Gopalganj -8100

E-Mail: shahjaphys@yahoo.com

Mobile Phone: 88-01716-11-3968

9. Academic and Administrative Responsibilities

Name of Responsibilities	Tenure
Chairman Department of Physics	2022 To Date
Chairman Department of Electronics and Telecommunication Engineering	From 2011 to 2022
Dean Faculty of Science	3 Years
Dean Faculty of Engineering Bangabandhu Sheikh Mujibur Rahman Science and Technology University (BSMRSTU), Gopalganj	3 Years
Registrar (in Charge) Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj	1 year 6 months
Proctor Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj	4 Years
House Tutor Habibur Rahman Hall, Rajshahi University, Rajshahi	1 Year
Provost Bijoy Dibos Hall Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj	4 Years
Member Teachers Association, Rajshahi University	1 Year

10. Committee member

- (i) Regent Board -- (7 Years)
- (ii) Planning and Development (4 Years)
- (iii) Academic Curriculum Preparation Committee
- (iv) Tender evaluation Committee and Technical Evaluation Committee

Leading many other committee as senior Professor of this university.

11. Educational background

Name of Institution	Name of Examination	Year of Examination	Board/ University	Result
Toyohashi University of Technology, Japan	Doctor of Engineering	2003	Toyohashi University of Technology, Japan	Awarded
Rajshahi University	M. Sc.	1994	Rajshahi University	First Class 1 st Position
Rajshahi University	B. Sc. (Hons.)	1993	Rajshahi University	First Class 1 st Position
Carmichael College, Rangpur	HSC	1990	Rajshahi	1 st Division
Naldanga Woomesh Chandra High school	S.S.C	1988	Rajshahi	1 st Division

12. Scientific employment and academic responsibilities

Name of Institution	Period of Service	Position
Gopalganj Science and Technology University	March 2012 – To Date	Professor
Science and Technology University		
Bangabandhu Sheikh Mujibur Rahman Science and Technology University	Sep. 2011 – March 2012	Associate Professor
Rajshahi University, Bangladesh	2 Feb 2006- September 2011	Associate Professor
Rajshahi University, Bangladesh	April 2004 – Feb 2006	Assistant Professor
Toyohashi University of Technology, Japan	Dec 2003-March 2004	Post doctoral researcher
Toyohashi University of Technology, Japan	Feb. 2000-Nov 2003	Doctor Research student (Japan)
Rajshahi University, Bangladesh	Feb. 1998- Jan 2000	Lecturer

13. Number of Publications: 42 (List given below)

14. International Conference attended: 9 (Different countries like USA, Japan, France, Singapore etc.)

15. Languages proficiency

Mother tongue: Bengali			
Other Languages:			
Language	Reading	Writing	Speaking
English	good	good	good
Japanese	poor	poor	good

16. Academic Referees:

1. Dr. Arun Kumar Basak

Professor Emeritus

Department of Physics

University of Rajshahi,

Rajshahi-6205

Bangladesh

e-mail: akbasak@gmail.com

2. Dr. M. Khalilur Rahman Khan

Professor

Department of Physics

University of Rajshahi,

Rajshahi-6205

Bangladesh

e-mail:

Doctor Thesis Title: “Fabrication of Ultrathin Epi-Si/ γ -Al₂O₃ Heterostructure and Its Device Applications”

Scientific Working Experience:

I have good working experience in the clean room environment. I have a long time experience on thin film fabrication and characterization of various materials (semiconductors, insulators etc.) using different thin film fabrication systems.

Thin film fabrication systems used: Molecular beam epitaxy (MBE), electron beam evaporation, thermal evaporation, sputtering, spin-coater, spray pyrolysis etc.

Characterization:

Surface and interface: Scanning electron microscope (SEM), Transmission electron microscope (TEM), Atomic force microscope (AFM).

Electrical characterization: Different I-V measurement system and impedance analyzer (Agilent Technology, Keithly instrument etc.)

Optical characterization: UV-IR, FTIR, Spectroscopic ellipsometry etc.

Other instruments: Lithography system and ion implantation and diffusion furnace, thickness measurement system and some other common instruments used in clean room for device fabrication etc.

List of Publications

(Total International Publication = 42)

1.	. “Semi-empirical Formulae for Electron Impact Ionization Cross-sections” M. Alfaz Uddinn, F. N. Islam, M. Shahjahan and M. G. M. Choudhury; <i>Indian J. Pure and Appl. Phys.</i> , <i>Vol. 39 (2001) pp. 205-212</i>
2.	“Fabrication of Resonance Tunneling Diode by γ -Al ₂ O ₃ / Si Multiple Heterostructures” M. Shahjahan , Y. Koji, K. Sawada and M. Ishida, <i>Jpn. J. Appl. Phys. Vol. 41 No. 4B (2002) pp.</i> <i>2602 – 2605</i>
3.	“Fabrication and Electrical Characterization of Ultrathin Crystalline Al ₂ O ₃ Gate Dielectric Films on Si(100) and Si(111) by Molecular Beam Epitaxy” - M. Shahjahan , N. Takahashi, K. Sawada and M. Ishida; <i>Jan. J. Appl. Phys. Vol. 41 (2002) pp.</i> <i>L1474 – L1477</i>
4.	“Anomalous Resistive Transition and Frequency Dependent Dielectric Constant of Zn _{1-x} M _x O [M = Li (Mg, Ba)] system” M. K. R. Khan, M. Mozibur Rahman, S. Javed Mia and M. Shahjahan ; <i>Indian J. of Pure and Appl. Phys. Vol 41 (2003) pp. 211-216</i>
5.	“Effect of Annealing on the Physical and Electrical Properties of Ultrathin Crystalline γ -Al ₂ O ₃ High-k Dielectric Deposited on Si-Substrates” M. Shahjahan , T.i Okada K. Sawada and M. Ishida; <i>Jpn. J. Appl. Phys. Vol. 43, 8A (2004) pp.5404</i>
6.	“Fabrication of metal-Oxide-Semiconductor Field Effect Transistors using Crystalline γ -Al ₂ O ₃ Films as the Gate Dielectrics” T. Okada, K. Sawada, M. Ishida and M. Shahjahan ; <i>Appl. Phys. Lett. Vol. 85, No. 21 (2004) pp. 5004-5006</i>
7.	“Current voltage Characteristics of γ -Al ₂ O ₃ / Si Resonant Tunneling Diodes with Different Quantum Well Thicknesses” M. H. Khatun, M. Shahjahan , R. Ito, K. Sawada and M. Ishida; <i>Jpn. J. Appl. Phys. Vol. 44, No. 7A, (2005) pp. 4795-4798</i>
8.	“Fabrication of Crystalline HfO ₂ High- κ Dielectric Films Deposited on Crystalline γ -Al ₂ O ₃ Films” T. Okada, M. Shahjahan , K. Sawada and M. Ishida; <i>Jpn. J. of Appl. Phys., Vol. 44, No. 4B, (2005), pp. 2320–2322</i>
9.	“Electrical Characteristics of epitaxial γ -Al ₂ O ₃ /Si for Quantum Tunneling Device” J.-S. Kim, M. Shahjahan , M.H. Khatun, K. Sawada, M. Ishida; <i>Jpn. J. Applied Phys. Vol.45, No. 6A, (2006) pp. 5107-5109</i>
10.	“Investigation of Nanocrystalline Epi-Si/ γ -Al ₂ O ₃ Heterostructure Deposited on Si Substrate by Spectroscopic Ellipsometry” M. H. Khatun M. Shahjahan , R. Ito, K. Sawada and M. Ishida; <i>Thin Solid Films Vol. 508 (2006) pp. 65-69</i>
11.	“Capacitance–voltage Characteristics and Switching Time of Double Barrier Resonant Tunneling Diode Fabricated with epi-Si and γ -Al ₂ O ₃ ” M. H. Khatun, M. Shahjahan , K. Sawada, M. Ishida; <i>Physica E 36 (2007) pp.123–127</i>
12.	“Studies on the Thermoelectric effect in Semiconducting ZnTe Thin films” M. S. Hossain, R. Islam, M. Shahjahan , and K. A. Khan; <i>European J. of Physics, 19 (2008) pp. 1114-1121</i>
13.	“Structural and Dielectric Properties of Zn _{1-x-y} Cd _x Li _y O Solid Solution” M. Kamruzzaman, M. K. R Khan, M. M. Rahman, M. Shahjahan and M. A. S. Karal; <i>Journal of Bangladesh Academy of Sciences, 32, No. 2 (2008)</i>
14.	“Binary Encounter Model for the Electron Impact K-shell Ionization of Atoms” M. A. R. Patoary, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan , A. K. Basak and B. C. Saha, <i>Int. J. Quantum Chem. 108, (2008) pp. 1326</i>

15.	“Empirical Model for the Electron Impact K-shell Ionization of Atoms” M. A.R. Patoary, M. A. Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak and M. R. Talukder, B. C. Saha, <i>Int. J. Quantum Chem.</i> 109 (2009) pp. 897–906
16.	“Synthesis and Characterization of $Zn_{1-x}Cd_xLi_yO$ Solid Solution” M. Kamruzzaman, M. K. R. Khan, M. M. Rahman, M. A. S. Karal, M. Shahjahan and M. G. M. Chowdhury, <i>The Nucleus</i> 46 (2009) (1-2).
17.	“Study of Sol-gel Derived Porous ZnO Photoelectrode for the Application of Dye-sensitized Solar Cells” M. F. Hossain, S. Biswas, M. Shahjahan, and T. Takahashi; <i>J. Vac. Sci. Technol. A</i> 27(4) (2009) pp. 1047 - 1051
18.	“Investigation of Photocatalytic Activity of TiO_2/WO_3 Bilayered Thin Films with Various Amounts of WO_3 Exposed Surface” S. Biswas, M. F. Hossain, M. Shahjahan, K. Takahashi, and T. Takahashi, A. Fujishima; <i>J. Vac. Sci. Technol. A</i> 27(4) (2009) pp. 880-884
19.	“Fabrication of Dye-sensitized Solar Cells with TiO_2 Photoelectrode Prepared by Sol-gel Technique with Low Annealing Temperature” M. F. Hossain, S. Biswas, M. Shahjahan, Arpi Majumder, and T. Takahashi; <i>J. Vac. Sci. Technol. A</i> 27(4) (2009) pp. 1042-1046
20.	“Optical and Photocatalytic Properties of $ZnO:Al$ Nano-wall Structure Deposited on Glass Substrate by Spray Pyrolysis” M. Shahjahan, M. K. R. Khan, M. F. Hossain, S. Biswas and T. Takahashi, Structural, , <i>J. Vac. Sci. Technol. A-Vol 27, No. 4</i> (2009) pp. 885-888
21.	“Modified Version of Revised Deutsch-Mark model for Electron Impact K-shell Ionization Cross Sections of Atoms at Relativistic Energies M. A. Patoary, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak and M. R. Talukder, B.C. Saha, <i>Int. J. Quantum Chem.</i> 109 (2009) pp. 1442
22.	“Effect of Al -doping on optical and Electrical Properties of Spray Pyrolytic Nano-crystalline CdO Thin films” M. K. R. Khan, M Azizar Rahman, M. Shahjahan, M. Mozibur Rahman, M. A. Hakim, D. Kumar Saha, J. Uddin Khan, <i>Current Applied Physics</i> 10 (2010) pp.790-796, doi: 10.1016/j.cap.2009.09.016
23.	“Generalized Kolbenstvedt Model for Electron impact Ionization of K-, L- and M- shell Ions” A. K. F. Haque, M. Shahjahan, M. A. Uddin, M. A. R. Patoary, A. K. Basak, B. C. Saha, and F. B. Malik; <i>Phys. Scr.</i> 81 (2010) pp. 045301
24.	“An Extended Empirical Model for Inner-shell Ionization of Atoms” A. K. F. Haque, M.R. Talukder, M. Shahjahan, M, A. Uddin, A. K. Basak, and B. C. Saha, <i>J. Phys. B: At. Mol. Opt. Phys.</i> 43 (2010) 115201
25.	“Electron Impact Ionisation in K-, L- and M-shell of Atomic Targets” M. A. R. Patoary, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak, and B. C. Saha, <i>Int. J. Quant. Chem.</i>, DOI: 10.1002/qua.22456 (2010)
26.	“TEM study of RTD Structure Fabricated with epi-Si/γ-Al_2O_3 Heterostructure” M. Shahjahan, M. H. Khatun , K. Sawada and M. Ishida; <i>Thin Solid Films</i>, 518 (2010) 2295–2298
27.	“Electrical, Magnetic and Dielectrical Properties of $Zn_{1-x}Cd_xO$ Synthesis System” M. Kamruzzan, MKR Khan, M. M. Rahman, M. A. S. Karal, M. Shahjahan, and M. Rafiqul Ahsan, <i>Int. J. of Modern Physics</i>
28.	“Synthesis of Thick TiO_2 Nanotube Arrays on Transparent Substrate by Anodization Technique” S. Biswas, M. Shahjahan, M. F. Hossain, and T. Takahashi, <i>Electrochemistry Communications</i>, 12 (5) (2010) 668-671
29.	Effect of Al-doping on optical and electrical properties of spray pyrolytic nano-crystalline CdO thin films; Effect of Al-doping on optical and electrical properties of spray pyrolytic nano-crystalline CdO thin films M.K.R. Khan, M. Azizar Rahman, M. Shahjahan, M. Mozibur Rahman, M.A. Hakim,

	Dilip Kumar Saha, Jasim Uddin Khan; <i>Current Applied Physics</i> , 10(3): (2010), pp.790-796
30.	“Electron impact inner-shell ionization of atoms” A. K. F. Haque, M. A. Uddin, M. Shahjahan, M. R. Talukder, A. K. Basak, B. C. Saha, <i>Advances in Quantum Chemistry</i> , Vol 61, 2011
31.	Electron impact ionization in K-, L-, and M-shells of atomic targets MAR Patoary, M Alfaz Uddin, AKF Haque, M Shahjahan, AK Basak, BC Saha <i>International Journal of Quantum Chemistry</i> , Volume 111, Issue 5, pp. 923-936, 2011
32.	Deposition and Characterization of p-Cu ₂ O Thin Films (Submitted: July 18, 2012; Accepted for Publication: M. Rasadujjaman, M. Shahjahan, M. K. R. Khan and M. M. Rahman, <i>SUST Journal of Science and Technology</i> , Vol. 20, No. 6, 2012; P:1-7
33.	Electron impact double ionization cross-sections of heavy elements M R Talukder, M Shahjahan and M A Uddin, <i>Phys. Scr.</i> 85 , 015301 (2012).
34.	Nano wall growth and structural, electro-optical characterization of spray pyrolytic cobalt oxide thin films M. M. Islam ¹ , M. G. M. Choudhury ² , M. M. Rahman ³ , M. K. R. Khan ^{3,*} , M. Shahjahan ⁴ , K. Uddin ⁵ , <i>Int. J. Thin Fil. Sci. Tec.</i> 4 , No. 1, 1-5 (2015)
35	Effect of Co doping on structural, optical, electrical and thermal properties of nanostructured ZnO thin films Sonet Kumar Saha, M. Azizar Rahman; M. R. H. Sarkar, M. Shahjahan, and M. K. R. Khan, Vol. 36, No. 3 <i>Journal of Semiconductors</i> March 2015
36.	Study of the morphology, photoluminescence and photoconductivity of ZnO–CdO nanocrystals A M M Tanveer Karim, M Mozibur Rahman, M Shahjahan and M K R Khan, <i>Mater. Res. Express</i> 2 (2015) 036402
37	“Structural Characterization of Cu-doped ZnO (Zn_{1-x}Cu_xO) Using Solid State Reaction Method.” Sharmin Aktar Mukta, Halima Khatun, Md. Shahjahan; <i>IOSR Journal of Applied Physics</i> , Volume 10, Issue 4 Ver. III (2018), 38-43
38	Effect of Cd Doping on the Structural, Optical and Electrical Properties of ZnO Thin Films Deposited by Spray Pyrolysis Technique” Sajal Khan, Halima Khatun, Mousumi Kundu and Md. Shahjahan; <i>IOSR Journal of Applied Physics</i> , Volume 11, Issue 3 Ser. I (May. –June. 2019), PP 50-57
39	“Effect of Ni-Doping on the Optical and Electrical Properties of Tin Oxide Thin Films Deposit by Spray Pyrolysis Method” Md. Rubel Sarkar, Mst. Halima Khatun, M. K. R. Khan, Md. Shahjahan; <i>International Journal of Science and Research (IJSR)</i> Volume 8 Issue 7, July 2019
40	Design and numerical analysis of a dispersion-flattened fabrication-friendly PCF-based THz waveguide. Farjana Imam, Sandipa Biswas, Md. Shahjahan, Halima Khatun, Rasel Ahmed, Abdullah Al-mamun Bulbul, <i>Journal of Optics</i> volume 51, pages 371–378 (2022)
41	10. “Infrared Spectra of xLi₂O.ySiO₂zCaO(1-x-y-z)B₂O₃ glasses.” Md. Emran Hossain, Md. Rafiqul Islam, R. Majumder, Goshtha Gopal Biswas, Md. Shahjahan, Mst. Halima Khatun, Md. Rafiqul Ahsan, M. Golam Mortuza, <i>Bulletin of Materials Science</i> , publication under process.
42.	

List of International Conferences Attended

1. AVS-2009 Boston, USA

2. International Conference on Silicon Heterostructure and Epitaxy (ICSI-5), 2007, Marseille, France

“TEM Study of RTD Structure Fabricated with epi-Si/ γ -Al₂O₃ Heterostructure”

-M. Shahjahan, H. Khatun Mst., K. Sawada, M. Ishida

3. Asia-Pacific conference on Transducers and Micro-Nano Technology, 2006, Singapore

“Capacitance-Voltage Characteristics and Switching Time of Double Barrier Resonant Tunneling Diode Fabricated with Epi-Si/ γ -Al₂O₃ Heterostructure”

M. Shahjahan, H. Khatun Mst., K. Sawada and M. Ishida

4. International Conference on Silicon Heterostructure and Epitaxy (ICSI-4), Hyogo, Japan 2005

“Investigation of Nanocrystalline Epi-Si/ γ -Al₂O₃ Heterostructure Deposited on Si Substrate by Spectroscopic Ellipsometry”

Mosammat Halima Khatun, Mohammad Shahjahan, Ryoki Ito, Kazuaki Sawada and Makoto Ishida

5. International Conference on Solid Films and Surfaces (ICSFS-12, 2004), Hamamatsu, Japan

“Investigation of High-k Crystalline γ -Al₂O₃ /Si interface by Spectroscopic Ellipsometry”

M. Shahjahan, H. Khatun Mst., T. Okada, K. Sawada and M. Ishida

6. Solid State Device and Materials-2003 (SSDM-2003)

“Effect of Nitrogen Annealing on the Electrical Properties of Ultrathin Crystalline γ -Al₂O₃ High- κ Dielectric Films Deposited on Si(111) Substrates” - M. Shahjahan, T. Okada, K. Sawada and M. Ishida

7. 2003 Silicon Nanoelectronics Workshop-2003 (IEEE), Kyoto, Japan

“Dependence of Peak to Valley Current Ratio on the Well Thickness of a Double Barrier Resonant Tunneling Diode Fabricated by epi-Si / γ -Al₂O₃ Heterostructures” - M. Shahjahan, R. Ito, K. Sawada and M. Ishida

8. International Workshop on Gate Insulator 2001(IWGI-2001), Tokyo, Japan

“Fabrication and Electrical Characterization of Ultrathin Epitaxial γ -Al₂O₃ gate Dielectric Films on Si(100) by Molecular Beam Epitaxy (MBE)” - Shahjahan Mohammad, Takahashi Nariya, Sawada Kazuaki, Ishida Makoto

9. Solid State Device and Materials-2001 (SSDM-2001) Tokyo, Japan

“The Formation of Resonance Tunnel Device by γ -Al₂O₃ / Si Multiple Heterostructure” - Y. Koji, M. Shahjahan, R.

Ito, K. Sawada and M. Ishida

Domestic Conferences in Japan

1. “Electrical properties of ultrathin Al_2O_3 fabricated on Si(100) substrates by MBE method”

M. Shahjahan, N. Takahashi, R. Ito, K. Sawada and M. Ishida

Domestic conference of the Japan Society of applied physics (The 62 nd Autumn Meeting, 2001)

11.3, C- / II, pp.642

2. “Dependencies of Peak to valley current ratio on the well thickness of a double barrier resonant tunneling diode fabricated by epi-Si/ γ - Al_2O_3 heterostructures”

M. Shahjahan, R. Ito, K. Sawada and M. Ishida

Domestic conference of the Japan Society of applied physics (The 63 rd Autumn Meeting, 2002)

12.2, P9- / III, pp.1203

3. “Effect of nitrogen annealing of ultrathin (~ 3 nm) crystalline Al_2O_3 films”

M. Shahjahan, T. Okada, K. Sawada and M. Ishida

Domestic conference of the Japan Society of applied physics (The 50 th Spring Meeting, 2003)

11.3, ZX- / II, pp.892

4. “Variation of peak current density of double barrier resonant tunneling diode fabricated by epi-Si/ γ - Al_2O_3 heterostructures”

M. Shahjahan, R. Ito, K. Sawada and M. Ishida

Domestic conference of the Japan Society of applied physics (The 64 rd Autumn Meeting, 2003)

12.2, ZF- / III, pp.1253