

## CURRICULUM VITAE

**Mirza Humaun Kabir Rubel, PhD**

**Associate Professor**

**Department of Materials Science and Engineering  
University of Rajshahi, Rajshahi-6205, Bangladesh**

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### Objective

**Application for postdoctoral position, visiting scholar or research assistant in the Institute of Inorganic Chemistry, Germany**

### Research Interests

The  $ABO_3$ -type perovskite oxides and its derivatives such as double perovskites (DPs) and/or quadruple perovskites (QPs) are a broad group of inorganic materials that bears great importance, because of their properties to applications can be tailored by the substitution of different elements in the crystal lattices. This rich diversity is the primary reason for their interesting physical and chemical properties such as superconductivity, magnetism, ferroelectricity, magneto-electric multiferroicity, dielectric permittivity, catalytic activity etc. Recently, Bi-based double-perovskite oxides have become a new series of magnetic materials showing superconductivity; in the midst of them the novel A-site ordered double perovskite and simple perovskite bismuthates have been explored that discovered a novel series of perovskite superconducting system and some other new compositional superconductors by adjusting both compositions and hydrothermal reaction conditions. These findings provide a guiding principle for the exploration of new Bi-based high temperature superconductors with the relationship between superconductivity and long-range ordering in the crystal lattices. In addition, the structure, compositional homogeneity, and the morphology of the synthesized magnetic materials have been examined using high resolution-SXRD and Neutron diffraction (ND) data, High-resolution-STEM, Scanning Electron Microscopy (SEM) and FT-IR techniques. Besides, various interesting physical properties including magnetic susceptibility, transport properties and thermal behavior was investigated on the sample pellets by high pressure using sophisticated PPMS and SQUID systems. In addition, the static and lattice dynamic behaviors of polar nano-regions (PNRs) in ferroelectric compounds with  $ABO_3$ -type structure is one of current interesting phenomena, have been investigated by inelastic light scattering. However, the synthesis routes of these perovskites are not so convenient. In recent years, many efforts have been devoted to explore new multifunctional materials and improving the synthesis methods of existent compounds. Among them, Hydrothermal and Solvothermal synthesis methods to these materials increasingly investigated for the direct crystallisation of the solid products especially complex oxide materials by employing various solvents and solution additives. These methods have significant advantages for the crystal formation from the nano- to micron-scale, the isolation of compositions, and lead to scalable processes for exploring materials at moderate temperatures that are not possible utilizing conventional solid-state routes. During the course of this investigation, my research interest concentrate to search new compositional materials either in powder or single crystal mode with novel and interesting properties using a variety of techniques especially a facile environment friendly hydrothermal and/or solvothermal methods to improve the quality of multifunctionality of materials. Furthermore, my research experiences deal with simulation of structural model from experimental (SXRD and ND) data by Rietveld method employing the computer Programs. I am also curious to execute first-principles study to understand material systems, structures, and their related properties in the frame work of density functional theory (DFT) based on software package CASTEP-code. The first principles study already have predicted structural, mechanical, thermal, and electronic properties of perovskites to understand material system precisely.

## Research Skills and Expertise

### Experimental and Computational methodology:

Hydrothermal reaction (autoclave & electric Oven), High-pressure and High-temperature (HPHT) synthesis (cubic anvil-cell), Solid-state-reaction (SSR) method (high-temperature furnace), Sol-gel process, Organic gel route, Multifunctional Structural Materials, DFT-calculations (CASTEP-code).

### Characterization techniques:

Single-crystal analysis, Magnetic susceptibility and Superconductivity (SQUID-Dynacool), Laboratory X-rays and powder diffraction, Synchrotron & Neutron diffractions (Powder diffraction), Rietveld refinements (RIETAN-FP), Resistivity and transport measurements (PPMS-Quantum Design), Thermal analysis (TG-DTA & TG-mass), Microstructure and Morphology (SEM-analysis), Nano-structure, Elemental mapping and Electron diffraction (TEM-analysis), UV-Spectroscopy, Atomic Force Microscopy (AFM), FT-IR, Chemical analysis (ICP, EDX & XRF).

## CURRENT POSITION

**Associate Professor,**  
**at Department of Materials Science and Engineering,**  
**University of Rajshahi.**

Rajshahi-6205, Bangladesh,  
June, 2017–Present.

## EDUCATION

**PhD** in Physics/Materials Science, University of Yamanashi  
**Dissertation title:** Study on Preparation of Superconducting Perovskite-type Bismuth Oxides by Hydrothermal Reaction  
**University of Yamanashi.**

Yamanashi, Japan,  
September, 2015.

**M. Sc. (Thesis)** in Solid State Physics (study conducted in English)

Rajshahi-6205, Bangladesh,  
April, 2008.

**Dissertation title:** “Morphogenesis of Phosphosilicate compounds with mixed divalent metal oxide  $x/2\text{Pbx}/2\text{ZnO}(1-x-z)\text{SiO}_2\text{zP}_2\text{O}_5$  with  $z = 50, 40, 30, 20, 10$  mol% and  $x = 0, 20, 40, 60, 80$  mol%”

**University of Rajshahi.**

Rajshahi-6205, Bangladesh,  
October, 2006.

**B. Sc. (Honours)** in Physics (study conducted in English)  
**University of Rajshahi.**

## GRANTS AND AWARDS

**Dean's Award-2020, Faculty of Engineering,** University of Rajshahi

Rajshahi-6205, Bangladesh,  
November 2020.

**Research grants,-Faculty of Engineering,** University of Rajshahi.

Rajshahi-6205, Bangladesh,  
June-2016 & October-2018.

**Dissertation fellowship,** Special Doctoral Program for Green Energy Conversion Science and Technology, University of Yamanashi.

Yamanashi, Japan,  
October, 2013–September 2015.

**Research Assistant fellowship**, University of Yamanashi  
**United Group Paper Award**, UNITED GROUP

**Poster Award**, The 4th International Seminar on Green Energy Conversion Science;-Summer School for Young Scientists-University of Yamanashi.

**PRESS RELEASE** on Discovery of New Superconducting Double Perovskite Oxide;

Visit: <http://www.inorg.yamanashi.ac.jp/English/27>

**Press Release on** “Superconducting double perovskite bismuth oxide (Na<sub>0.25</sub>K<sub>0.45</sub>)(Ba<sub>1.00</sub>)<sub>3</sub>(Bi<sub>1.00</sub>)<sub>4</sub>O<sub>12</sub> prepared by a low-temperature hydrothermal reaction”

Visit:[http://www.spring8.or.jp/en/news\\_publications/press\\_release/2014/140303/](http://www.spring8.or.jp/en/news_publications/press_release/2014/140303/)

**Certificate of Recognition**, ACS Publication Awards-2018

**Certificate of Reviewing**, The editors of Journal of Physics and Chemistry of Solids.

**Certificate of Excellence in Reviewing**, Current Journal of Applied Science and Technology

**Certificate of Excellence in Reviewing**, Journal of Scientific Research and Reports

**Certificate of Excellence in Reviewing**, Journal of Scientific Research and Reports

**Certificate of Excellence in Reviewing**, Asian Journal of Probability and Statistics

Scopus documents by author (2019) (compare the document counts for up to 15 authors) Placed in the list, Rajshahi University

**Gold medal award for academic excellence**, Madar Bux Hall, University of Rajshahi.

Yamanashi, Japan, 2012.  
Dhaka-1212, Bangladesh, 2019.

Yamanashi, Japan,  
August 26, 2015.

Center for Crystal Science and Technology

University of Yamanashi, Japan,  
Date: 03/03/2014.

SPring-8, beam line BL02B2  
(Powder diffraction), Hyogo, Japan.

Date: 03 Mar, 2014.

1155 Sixteenth Street N.W.

Washington, DC 20036.

Date: 30 March, 2019.

Certificate No:

SDI/HQ/PR/Cert/61707/MIR, 2020

SDI/HQ/PR/Cert/62742/MIR, 2020

SDI/HQ/PR/Cert/63122/MIR, 2020

SDI/HQ/PR/Cert/64209/MIR, 2020

SDI/HQ/PR/Cert/64209/MIR, 2020

SDI/HQ/PR/Cert/64209/MIR, 2020

SDI/HQ/PR/Cert/64209/MIR, 2020

Elsevier publisher, August-2019.

August-2019

August-2019

May, 2008.

## PROFESSIONAL ASSOCIATIONS

**Member**, Bangladesh Physical Society (LM C0059)

**Member**, Ceramic Society of Japan

**SPring-8** User Community (SPRUC) Membership

**Research gate (R<sup>G</sup>) Profile**

**Google Scholar**

[https://www.researchgate.net/profile/Mirza\\_Rubel](https://www.researchgate.net/profile/Mirza_Rubel)

<https://scholar.google.com/citations?user=QWwbd3QAAAAJ&hl=en&citsig=AMstHGRJoJPYGtkDKW6H98CRlnh4SdPXA>

<https://www.linkedin.com/in/mirza-rubel-772213164/>

<https://www.linkedin.com/in/mirza-rubel-772213164/>

2011-Present

2013-Present

2013-Present

2013-Present

2013-Present

2015-Present

2015-Present

## TEACHING & RESEARCH EXPERIENCE

**Teaching and Course Direction:**

**Postgraduate level (Mater's level)**

Magnetic Materials; Advanced Nuclear Engineering; and Advanced Ceramics.

**at Dept. of Materials Science and Engineering (MSE),**

University of Rajshahi.

**Undergraduate level (B.Sc. Engg. & B.Sc. Honors)**

Rajshahi-6205, Bangladesh,  
2015–Present.

Rajshahi–6205, Bangladesh

Crystallography and Structure of Materials, Magnetic and Dielectric Materials, Glass and Ceramics, Phase diagram and Microstructure of Materials, Design and Selection of Engineering Materials. <b>at Dept. of Materials Science and Engineering (MSE),</b> University of Rajshahi.	2010–present.
<b>Guest Lecturer and Research Assistant,</b> <b>at Dept. of Glass and Ceramic Engineering (GCE),</b> Rajshahi University of Engineering and Technology (RUET)	Rajshahi–6204, Bangladesh 2015–presnt.
<b>Dissertation Co-supervisor, Master's and PhD level</b> <b>at Dept. of Materials Science and Engineering and Physics</b> University of Rajshahi.	Rajshahi–6205, Bangladesh 2015–present.
<b>Graduate Student (Doctoral course),</b> <b>at Center for Crystal Science and Technology,</b> University of Yamanashi.	Yamanashi, Japan October 2012- September 2015. 4259 Nagatsuta, Kanagawa 226–8503 (Japan). 2013–2015.
<b>Research Internship, at Materials and Structural Laboratory,</b> Tokyo Institute of Technology (TIT).	
<b>Research Internship, at Inorganic Synthesis Chemistry</b> <b>Laboratory, Faculty of Engineering, Hokkaido University</b>	Sapporo 060-8628, Japan, 2014-2015.
<b>Experience on synchrotron X-ray experiments, at SPring-8,</b> beamline BL02B2 (Powder Diffraction).	Hyogo, Japan, 2013–2015.

## PUBLICATIONS

1. **Mirza H. K. Rubel**, A. Miura, T. Takei, N. Kumada, M. M. Ali, M. Nagao, S. Watauchi, I. Tanaka, K. Oka, M. Azuma, E. Magome, C. Moriyoshi, Y. Kuroiwa, and A. K. M. A. Islam, Superconducting Double Perovskite Bismuth Oxide Prepared by a Low-Temperature Hydrothermal Reaction, *Angew. Chem. Int. Ed.*, 53, 14, 3599-3603, 02, 2014.
2. **Mirza H. K. Rubel**, T. Takei, N. Kumada, M. M. Ali, A. Miura, K. Tadanaga, K. Oka, M. Azuma, M. Yashima, K. Fujii, E. Magome, C. Moriyoshi, Y. Kuroiwa, J. R. Hester and M. Avdeev, Hydrothermal Synthesis, Crystal Structure, and Superconductivity of a Double Perovskite Bi Oxide, *Chem. Mater.*, 28, 02, 459-465, 01, 2016.
3. **Mirza H. K. Rubel**, T. Takei, M. M. Ali, A. Miura, K. Tadanaga, K. Oka, M. Azuma, E. Magome, C. Moriyoshi, Y. Kuroiwa, Hydrothermal Synthesis, Structure, and Superconductivity of Simple Cubic Perovskite  $(\text{Ba}_{0.62}\text{K}_{0.38})(\text{Bi}_{0.92}\text{Mg}_{0.08})\text{O}_3$  with  $T_c \sim 30$  K, *Inorg. Chem.*, 56, 6, 3174-3181, 02, 2017.
4. **Mirza H. K. Rubel**, T. Takei, N. Kumada, M. M. Ali, A. Miura, K. Tadanaga, K. Oka, M. Azuma, E. Magomae, C. Moriyoshi, Y. Kuroiwa, Hydrothermal synthesis of a new Bi-based  $(\text{Ba}_{0.82}\text{K}_{0.18})(\text{Bi}_{0.53}\text{Pb}_{0.47})\text{O}_3$  superconductor, *Journal of Alloys and Compounds*, 634, 12, 208-214, 06, 2015.
5. N. Kumada, **Mirza H. K. Rubel**, A. Miura, and T. Takei, Molten salt synthesis of spinel-type  $\text{LiTi}_2\text{O}_4$ , *Journal of the Ceramic Society of Japan*, 122, 04, 307-309, 02, 2014.
6. M. S. Ali, M. Aftabuzzaman, M. Roknuzzaman, M. A. Rayhan, F. Parvin, M. M. Ali, **Mirza H. K. Rubel**, A. K. M. A. Islam, New superconductor  $(\text{Na}_{0.25}\text{K}_{0.45})\text{Ba}_3\text{Bi}_4\text{O}_{12}$ : A first-principles study, *Physica C*, 506, 08, 53-58, 11, 2014.
7. **Mirza H. K. Rubel**, M. A. Hadi, M. M. Rahaman, M. S. Ali, M. Aftabuzzaman, R. Parvin, A. K. M. A. Islam, and N. Kumada, Density functional theory study of a new Bi-based  $(\text{K}_{1.00})(\text{Ba}_{1.00})_3(\text{Bi}_{0.89}\text{Na}_{0.11})_4\text{O}_{12}$  double perovskite superconductor, *Computational Materials Science*, 138, 15, 160-165, 10, 2017.
8. **Mirza H. K. Rubel**, M. E. Hossain, M. S. Parvez, M. M. Rahaman, M. S. Islam, N. Kumada, S. Kojima, Low-temperature synthesis of potassium triniobate ( $\text{KNb}_3\text{O}_8$ ) ceramic powder by a novel aqueous organic gel route, *J Aust Ceram Soc*, 55, 03, 759-764, 09, 2019.

9. **Mirza H. K. Rubel**, M. S. Islam, U. S. M. Mahmuda, M. M. Rahaman, M. E. Hossain, M. S. Parvez, K. M. Hossain, M. I. Hossain, J. Hossain, J. Yamanaka, N. Kumada and S. Kojima,  $\text{Ca}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$  Ferroelectric Nanopowders for Ultrahigh-Density Optical Data Storage, *ACS Appl. Nano Mater.*, 1, 11, 6289-6300, 10, 2018.
10. **Mirza H. K. Rubel**, M. M. Ali, M. S. Ali, R. Parvin, M. M. Rahaman, K. M. Hossain, M. I. Hossain, A. K. M. A. Islam, N. Kumada, First-principles study: Structural, mechanical, electronic and thermodynamic properties of simple-cubic-perovskite  $(\text{Ba}_{0.62}\text{K}_{0.38})(\text{Bi}_{0.92}\text{Mg}_{0.08})\text{O}_3$ , *Solid State Communications*, 288, 05, 22-27, 02, 2019.
11. M. M. Rahaman, **Mirza H. K. Rubel**, M. A. Rashid, M. A. Alam, K. M. Hossain, M. I. Hossain, A. A. Khatun, M. Hossain, A. K. M. A. Islam, S. Kojima, N. Kumada, Mechanical, electronic, optical, and thermodynamic properties of orthorhombic  $\text{LiCuBiO}_4$  crystal: A first-principles study, *J Mater Res Tecnol.*, 8, 05, 3783-3794, 09, 2019.
12. M. Rahman, M.A. Newaz, B.K. Mondal, A. Kuddus, M.A. Karim, M.M. Rashid, **Mirza H. K. Rubel**, J. Hossain, Unraveling the electrical properties of solution-processed copper iodide thin films for CuI/n-Si solar cells, *Materials Research Bulletin*, 118, 110518, 1-7, 10, 2019.
13. M. Saiduzzaman, Y. Hikaru, T. Takei, S. Yanagida, N. Kumada, M. Nagao, H. Yamane, M. Azuma, **Mirza H. K. Rubel**, C. Moriyoshi, and Y. Kuroiwa, Hydrothermal Synthesis and Crystal Structure of a  $(\text{Ba}_{0.54}\text{K}_{0.46})_4\text{Bi}_4\text{O}_{12}$  Double-Perovskite Superconductor with Onset of the Transition  $T_c \sim 30$  K, *Inorg. Chem.*, 58, 18, 11997-12001, 08, 2019.
14. B. K. Mondal, M. A. Newaz, M. A. Rashid, K. M. Hossain, S. K. Mostaque, M. F. Rahman, **Mirza H. K. Rubel**, and J. Hossain, Electronic Structure of  $\text{In}_{3-x}\text{Se}_4$  Electron Transport Layer for Chalcogenide/p-Si Heterojunction Solar Cells, *ACS Omega*, 4, 18, 17762-17772, 10, 2019.
15. M. Rahman, J. Hossain, A. Kuddus, S. Tabassum, **Mirza H. K. Rubel**, H. Shirai, A. B. M. Ismail, A novel synthesis and characterization of transparent CdS thin films for CdTe/CdS solar cells, *Applied Physics A*, 126, 02, 145, 02, 2020.
16. M. F. Rahman, J. Hossain, A. Kuddus, S. Tabassum, **Mirza H. K. Rubel**, M. M. Rahman, Y. Moriya, H. Shirai, and A. B. M. Ismail, A novel CdTe ink-assisted direct synthesis of CdTe thin films for the solution-processed CdTe solar cells, *J Mater Sci (Electronic materials)*, 55, 06, 7715-7730, 03, 2020.
17. **Mirza H.K. Rubel**, K. M. Hossain, S. K. Mitro, M. M. Rahaman, M. A. Hadi, A. K. M. A. Islam, Comprehensive first principle calculations on physical properties of  $\text{ScV}_2\text{Ga}_4$  and  $\text{ZrV}_2\text{Ga}_4$  in comparison with superconducting  $\text{HfV}_2\text{Ga}_4$ , *Materials Today Communications*, 24, 100935, 01, 2020.
18. M. A. Rashid, M. M. Islam, M. A. A. Saiham, M. R. Ahsan, M. G. Mortuza, **Mirza H. K. Rubel**, Spectroscopic Study of  $x\text{SiO}_2(1-x)\text{Sb}_2\text{O}_3$  for  $x = 10\%$ ,  $20\%$ ,  $30\%$ ,  $40\%$  and  $50\%$  mol% as Quench Glass and Glass Ceramics, *Journal of Scientific and Engineering Research*, 6, 04, 144-152, 01, 2019.
19. **Mirza H. K. Rubel**, S. K. Mitro, B.K. Mondal, M.M. Rahaman, M. Saiduzzaman, J. Hossain, A. K. M. A. Islam, N. Kumada, Newly synthesized A-site ordered cubic-perovskite superconductor  $(\text{Ba}_{0.54}\text{K}_{0.46})_4\text{Bi}_4\text{O}_{12}$ : A DFT investigation, *Physica C: Superconductivity and its applications*, 574, 1353669, 2020.
20. Md. Abdur Rashid, Bipanko Kumar Mondal, **Mirza H. K. Rubel**, Md. Mahbubor Rahman, Olin Thompson Mefford, and Jaker Hossain, Synthesis of Self-Assembled Randomly Oriented  $\text{VO}_2$  Nanowires on a Glass Substrate by a Spin Coating Method, *Inorg. Chem.* 59, 15707-15716, 2020.
21. Jaker Hossain, Mahbubor Rahman, Md Mahabub Alam Moon, Bipanko Kumar Mondal, Md Ferdous Rahman, and **Mirza H K Rubel**, Guidelines for a highly efficient CuI/n-Si heterojunction solar cell, *Eng. Res. Express* 2, 04, 5019, 2020.
22. Hossain, M. Khalid, Biswas, Manik C., Chanda, Rajesh K.<sup>4</sup>, **Mirza, H. K. Rubel**<sup>5</sup>, Khan, M. Ishak<sup>6</sup>, Hashizume, Kenichi, Experimental and theoretical studies on the barium zirconate ( $\text{BaZrO}_3$ ) proton conductor: A review, *Renewable and Sustainable Energy Reviews*, RSER-D-20-03680-under review.

23. M.A. Hadi, S.K. Mitro, **Mirza H.K. Rubel**, S.H. Naqib and A.K.M.A. Islam, Novel layered semiconductor  $\text{Bi}_3\text{O}_2\text{S}_2\text{Cl}$ : A promising material for optoelectronic applications, DOI: 10.13140/RG.2.2.26391.39841.
24. M. M. Islam, M. A. Rashid, M. P. Ahammad, M. E. Hossain, M. R. Ahsan, M. G. Mortuza, **M. H. K. Rubel**, Morphogenesis of Silicovanadate Glasses: Investigation of physical properties, ACSJ-S-20-00191, J Aus Cer Soc (under review).
25. K. M. Hossain, **Mirza H. K. Rubel**, M. M. Rahaman, M. M. Hossain, M. I. Hossain, A. A. Khatun, J. Hossain, A. K. M. A. Islam, S. Kojima, Dynamical stability and physical properties of perovskite  $\text{AVO}_3$  (A = Ba, Sr, Ca, Pb): A comparative first-principles study, cond-mat.mtrl-sci, preprint, arXiv:1905.01437, 1-32, 05, 2019.
26. **Mirza H. K. Rubel**, K. M. Hossain, A. A. Khatun, M. A. Hossain, M. M. Rahaman, M. M. Ali, M. M. Hossain, J. Hossain, M. Rasadujjaman, S. Kojima, An *ab-initio* study on physical properties of  $\text{Pd}^{2+}$  incorporated double perovskites  $\text{CaPd}_3\text{B}_4\text{O}_{12}$  (B = Ti, V), cond-mat.mtrl-sci, preprint, arXiv:1904.05099, 04, 2019.
27. **Mirza H. K. Rubel**, [Study on preparation of superconducting perovskite-type bismuth oxides by hydrothermal reaction](http://ci.nii.ac.jp/naid/500001054464), ci.nii.ac.jp/naid/500001054464, 09, 2015.
28. K. M. Hossain, M. I. Hossain, **Mirza H. K. Rubel**, M. M. Rahaman, Hydrothermal synthesis, phase analysis and characterizations of lead-free ferroelectric  $\text{BM}^{2+}$  (Zn, Ca, Mg)T–BFO system, Conference proceedings, KUET, Bangladesh, CM-IVC-10, 05, 2018.
29. M. I. Hossain, K. M. Hossain, **Mirza H. K. Rubel**, M. M. Rahaman, Hydrothermal Synthesis, Crystal Structure and Characterizations of Multiferroic Perovskites  $\text{RSrTiFeO}_6$  (R = Mg, Zn, Co, Ba) Compound, Conference proceedings, KUET, Bangladesh, CM-IVC-09, 05, 2018.
30. **Mirza H. K. Rubel**, K. M. Hossain, M. M. Rahaman, J. Hossain, S. K. Mitro, B. K. Mondal, A. K. M. A. Islam, and N. Kumada, A comparative study on Bi-based  $(\text{Ba}_{0.82}\text{K}_{0.18})(\text{Bi}_{0.53}\text{Pb}_{0.47})\text{O}_3$  simple-cubic-perovskite superconductor by first principles, Computational Materials Science, to be submitted.

## CONFERENCES AND MEETINGS

1. **Mirza H. K. Rubel**, M Emrul Kayesh, and M Rafiqul Ahsan. Structural Investigation of  $\text{Na}_2\text{O-SiO}_2\text{-B}_2\text{O}_3$  Glasses by Infrared Spectra. Poster presentation, International Conference on Physics of Today-2012, 15-16 March, 2012, BUET, Bangladesh.
2. **Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada. Preparation of a new superconductive bismuth oxide by hydrothermal reaction Poster presentation, Annual Meeting of the Ceramic Society of Japan, 17-19 March, 2013, Tokyo Institute of Technology (TIT), Ookayama campus, Meguro, Tokyo, Japan.
3. **Mirza H. K. Rubel**, Takahiro Takei, Nobuhiro Kumada. Superconducting bismuth double perovskite oxide  $(\text{Na}_{0.25}\text{K}_{0.45})(\text{Ba}_{1.00})_3(\text{Bi}_{1.00})_4\text{O}_{12}$  prepared by low temperature hydrothermal reaction. Poster presentation, The 2<sup>nd</sup> International Seminar for ‘Green Energy Conversion Science and Technology’ September 2-4, 2013, Nagano, Japan.
4. **Mirza H. K. Rubel**, Takahiro Takei, Nobuhiro Kumada. Low-temperature hydrothermal synthesis of a new double perovskite-type bismuthate  $(\text{Na}_{0.25}\text{K}_{0.45})(\text{Ba}_{1.00})_3(\text{Bi}_{1.00})_4\text{O}_{12}$ . Oral presentation, The 2<sup>nd</sup> International Symposium on Inorganic and Environmental Materials (ISIEM) October 27-31, 2013. University of Rennes-1, France.
5. **Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada, Kengo Oka, Masaki Azuma, Eisuke Magome, Chikako Moriyoshi, Yoshihiro Kuroiwa. Low temperature hydrothermal synthesis of a new superconductive double perovskite bismuth oxide  $(\text{Na}_{0.25}\text{K}_{0.45})(\text{Ba}_{1.00})_3(\text{Bi}_{1.00})_4\text{O}_{12}$ . Oral presentation, 第 52 回セラミックス基礎科学討論会, 9-10 January, 2014, Nagoya, Japan.
6. **Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada, Kengo Oka, and Masaki Azuma. Effect of hydrothermal synthesis temperatures on superconducting properties of double perovskite bismuth oxides. The 3<sup>rd</sup> International Seminar for Special Doctoral Program ‘Green Energy Conversion Science and Technology’, August 25-27, 2014, Hokuto, Yamanashi, Japan.
7. **Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada, Effect of hydrothermal synthesis temperatures on superconducting and some other properties of double perovskite bismuth oxides. Oral presentation



第 27 回秋季シンポジウム, 27<sup>th</sup> Fall Meeting of The Ceramic Society of Japan, September 9-11, 2014, Kagoshima University, Japan.

**8. Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada. Hydrothermal synthesis of a new Bi based  $(\text{Ba}_{0.82}\text{K}_{0.18})(\text{Bi}_{0.53}\text{Pb}_{0.47})\text{O}_3$  superconductor. Oral presentation, Fall meeting of Ceramic society of Japan, January 7-8, Kyoto, Japan.

**9. Mirza H. K. Rubel**, Akira Miura, Takahiro Takei, Nobuhiro Kumada, poster presentation Preparation of new Bi based simple and double perovskite-type superconductors by hydrothermal reaction. Poster presentation, The Annual Meeting of the Ceramic Society of Japan, Date: March 18-20, 2015, Ookayama University, Japan.

**10. Mirza H. K. Rubel**, M. S. Ali, M. M. Rahaman, M. Aftabuzzaman, and A. K. M. A. Islam. Bi-based New Superconductor  $(\text{K}_{1.00})(\text{Ba}_{1.00})_3(\text{Bi}_{0.85}\text{Na}_{0.15})_4\text{O}_{12}$ : First-principle Study. PP-74, International conference on Physics-2016, 10-12 March, Atomic Energy Centre, Dhaka, Bangladesh.

**11. K. M. Hossain, M. I. Hossain, Mirza H. K. Rubel, M. M. Rahaman.** Hydrothermal synthesis, phase analysis and characterizations of lead-free ferroelectric  $\text{BM}^{2+}(\text{Zn, Ca, Mg})\text{T-BFO}$  system. Conference on "Weather Forecasting and Advances in Physics"-2018, 11-12 May, Khulna University of Engineering & Technology (KUET), Khulna-9203, Bangladesh.

**12. Md. Imran Hossain, K. M. Hossain, Mirza H. K. Rubel, M. M. Rahaman.** Hydrothermal Synthesis, Crystal Structure and Characterizations of Multiferroic Perovskites  $\text{RSrTiFeO}_6$  (R = Mg, Zn, Co, Ba) Compound. Conference on "Weather Forecasting and Advances in Physics"-2018, 11-12 May, Khulna University of Engineering & Technology (KUET), Khulna-9203, Bangladesh.

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