DR. MITA BISWAS

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OBJECTIVES:

- To learn new ideas and Techniques integrating them into desired results.
- To seek a quality environment where my knowledge can be enriched and shared.

EDUCATIONAL QUALIFICATION:

- Ph.d awarded **(Dt: 6.03.2020)** from **Physics Department**, **Jadavpur University (Title: Formation & characterization of some Si-Al-based oxynitride solid solution phases)**.
- M.Tech (Material science and Engineering) from **Bengal Engineering and Science University (BESU)** with 74% (2011).
- M.Sc (Electronics and Communication) from **Ranchi University** with 66% (2009)
- B.Sc (Physics Honors) from Jogamaya Devi College, **Calcutta University** with 50% (2006).
- Higher Secondary from **National High School for Girls'** (W.B.C.H.S.E.) with 62% (2002).
- Madhyamik Examination from **Bidya Bharati Girls' High School** (W.B.B.S.E.) with 78% (2000).

PROFESSIONAL EXPERIENCE:

- **Currently working as in D.P. Ahuja & Co** **25th September 2023 - continuing**

  Position Hold = Patent Associate
- **CSIR-Central Glass and Ceramic Research Institute** **April 2020 - September 2023**

  Position Hold = Post Doc (Part time)
- **CSIR-Central Glass and Ceramic Research Institute** **December 2018-March 2020**

  Position Hold = Research Associate I

- **CSIR-Central Glass and Ceramic Research Institute** **February 2017-October 2018**

  Position Hold = Research Associate I

- **CSIR-Central Glass and Ceramic Research Institute** **April 2013- October 2016**

  Position Hold= Senior Research Fellow

- **CSIR-Central Glass and Ceramic Research Institute** **August 2011- March 2013**

  Position Hold= Project Fellow (III)

ACADEMIC PROJECT COMPLETED:

- Project Work at 3rd and 4th Semester (Time Duration = 1 year) of M.Tech in BESU, Shibpur, Howrah, India: **Metal Functionalization of Silicon Nanocrystals for Biomedical applications.**

- Project Work during the 2nd year of M.Sc (Time Duration = 6 months) in Ranchi University, Ranchi, India**: Direct Conversion of Centigrade scale in Kelvin scale using Temperature Transducer.**

R & D PROECTS:

Associated as an active member in the listed below 4 sponsored R &D projects.

MLP 0204: Wear resistance ceramics for cutting and milling operations: Process optimization of SiAlON - WC composite for rock drilling applications

MLP 0202: SiAlON inserts of high speed cutting of hard materials

ESC 0104: Advanced ceramic materials and components for energy and structural applications

SSP 0218: Preparation and characterization of SiAlON cutting tool inserts.

TEACHING EXPERIENCE:

I have been associated with teaching in degree level college of Kolkata on per time class basis onwards from 2019.

PUBLICATIONS:

1."Sintering behavior & microstructure of SPS processed pure 15R-SiAlON polytype", Mita Biswas, Siddhartha Bandyopadhyay, Soumya Sarkar**. Journal of Alloys and Compounds** 768 (2018) 130-135. (I.F. = 4.65)

2."**Tribo-mechanical characterization of SPS processed, phase pure 15R-SiAlON polytype: Effect of sintering temperature**", Mita Biswas, Soumya Sarkar, Siddhartha Bandyopadhyay. **Ceramics International** 44 (2018) 18703–18710. (I.F. = 3.83)

3."**Improvements in mechanical properties of SPS processed 15R-SiAlON polytype through structurally survived MWCNT reinforcement",** Mita Biswas, Soumya Sarkar, Siddhartha Bandyopadhyay. **Journal of Materials Chemistry and Physics** 222 (2019) 78-80. (I.F. = 3.40)

4. **"Synthesis of pure 15R-SiAlON polytype & its crystal structure under carbothermal-reduction-nitridation**", **,** Mita Biswas, Siddhartha Bandyopadhyay, Dipten Bhattacharya, **Journal of Materials Chemistry and Physics** 243 (2020) 122617-122627. (I.F. = 3.40)

5."Densification, microstructure and tribo-mechanical performance of SPS processed 27R-SiAlON polytype reinforced AlN: A comparison between continuous and pulsed direct current mode", Mita Biswas, Soumya Sarkar and Siddhartha Bandyopadhyay. **Journal of Metallurgical and Materials Transactions** A 50[5] (2019) 2381-2390. (I.F. = 2.05)

6. "27R-SiAlON reinforced AlN composite: synthesis, sintering & characterization" Mita Biswas, Siddhartha Bandyopadhyay, **Metals and Materials International** (Accepted on 16.11.19). (I.F. = 1.99)

7." Sintering & Characterizations of Hard-to-Hard Configured Composite: Spark Plasma Sintered WC Reinforced α-SiAlON" Mita Biswas, Soumya Sarkar, Rupa Halder, Sandip Bysakh, Kuttanellore Muraleedharan and Siddhartha Bandyopadhyay**, Journal of Physics and Chemistry of solids** 145 (2020) 109548-109562. (I.F. = 2.40)

8. "Metal – Hard Ceramic Joining: Direct Bonding between 316-Austenitic Stainless Steel & α SiAlON" Mita Biswas, Gopa Chakraborty, Barun Haldar and Siddhartha Bandyopadhyay**, International Journal of Current Engineering and Technology**, 4[2] (2014) 793-797. (I.F. = 2.35)

9. "**Spark plasma sintering processed α-SiAlON bonded tungsten carbide: Densification, microstructure and tribomechanical properties"** Soumya Sarkar, Mita Biswas, Rupa Halder and Siddhartha Bandyopadhyay, **Journal of Materials Chemistry and Physics** 248 (2020) 122955-122965. (I.F. = 3.40)

10."Z<60 Rare Earth Promoted α-Si_3N_4: Praseodymium", Siddhartha Bandyopadhyay, Rupa Halder, Sandip Bysakh, Mita Biswas and Barun Haldar. **Journal of European Ceramic Society**, 35 (2015) 4011–4016. (I.F. = 3.41)

11." Spark plasma-sintered $MoSi_2$-reinforced Y–α–SiAlON ceramics: mechanical and high temperature tribological properties" Ajay S. Kalyanwat, S. Sarkar, Mita Biswas, R. Halder, S. Bandyopadhyay and M. F. Wani, **Australian Ceramic Society** 56 (2020) 265-272. (I.F. = 1.30)

12."SPS processed TiB_2 reinforced Y-α-SiAlON composites: High temperature tribo-mechanical properties" Himanshu, S. Sarkar, R. Halder, Mita Biswas, S. Bandyopadhyay and M. F. Wani, **Composite Theory and Practice,** 19[3] (2019) 95-99. (I.F. =1.52)

13. "Densification, microstructure and tribomechanical properties of SPS processed β-SiAlON bonded WC composites" Soumya Sarkar, Rupa Halder, Mita Biswas, and Siddhartha Bandyopadhyay, **International Journal of Refractory Metals and Hard Materials** 92 (2020) 105318-105328.(I.F. = 3.40)

14."Crystal structure of 27R SiAlON synthesized under carbothermal reduction" Mita Biswas, Aditi Sahoo, K. Muraleedharan and Siddhartha Bandyopadhyay**, Transactions of Indian Ceramic Society** 8[1] (2021) 1-5. (I.F. = 1.01)

Conference Proceedings:

15."Si-&O-Substituted AlN by carbothermal reduction nitridation process", Mita Biswas, Siddhartha Bandyopadhyay. Research Scholar Day, August 2013, CSIR CGCRI, Kolkata, India.

16."Direct joining between 316 Austinitic steel and α-SiAlON",(Best Oral Presentation) Mita Biswas, Siddhartha Bandyopadhyay. Research Scholar Day, September 2015, CSIR CGCRI, Kolkata, India.

17."Nano synthesis of SiAlON polytypes", Mita Biswas, Siddhartha Bandyopadhyay. National Conference on Nanotechnology: Materials & Applications (NCoN: M&A) June 2016, Jadavpur University, Kolkata, India.

18. "Hard α-Si-Al-O-N ceramics stabilized with large rare earth cation suitable for production of cutting tool inserts", Mita Biswas, Siddhartha Bandyopadhyay. India International Science Fest (IISF) – Young Scientist Conclave (YSC), Dec 8-11, 2016, National Physical Laboratory, New Delhi, India.

19."Effect of Carbon Nanotube on the tribo-mechanical properties of spark plasma sintered polytype SiAlON ceramics", Mita Biswas, Soumya Sarkar & Siddhartha Bandyopadhyay. 2nd International Conference on Alumina and Other Functional Ceramics (AOFC) 2017, February 15-17, 2017, CSIR-CGCRI, Kolkata, India.

20. "Pr stabilized Al- & O- substituted α-Si3N4 ceramics", Mita Biswas, Siddhartha Bandyopadhyay. 2nd International Conference on Alumina and Other Functional Ceramics (AOFC) 2017, February 15-17, 2017, CSIR-CGCRI, Kolkata, India.

21." Carbonitridation of Alumina in presence of Silica", (Best Poster Award), Mita Biswas, Siddhartha Bandyopadhyay. 81 st Annual Session of Indian Ceramic Society: EH-TACAG, 14-16 December, 2017, Pune, India.

22. "Effect of SPS process temperature on tribo-mechanical properties of additive free SiAlON polytype", Mita Biswas, S. Sarkar and S. Bandyopadhyay. 29th AGM of MRSI & AFEM, 14-16 February, 2018, Trichy, India.

23. "Improvements in tribo-mechanical properties of SPS processed SiAlON polytype via structurally survived MWCNT reinforcement" S.Sarkar, Mita Biswas and S. Bandyopadhyay. 29th AGM of MRSI & AFEM, 14-16 February, 2018, Trichy, India.

24. "Relation between mechanical properties and sintering temperature of Spark Plasma Sintered additive free, phase pure 15R-SiAlON Polytype", Mita Biswas and S. Bandyopadhyay. International conference of Advanced Materials and Processes for Defence application ADMAT 2019, 23 -25 September, 2019, Hyderabad, India.

ACHIEVMENTS:

- Got the 3rd best Poster Award in 81st Annual Session of Indian Ceramic Society: EH-TACAG, 14-16 December, 2017,Pune, India.
- Got the best Oral Presentation Award in Research Scholar Day, September 2015, CSIR CGCRI, Kolkata, India
- Obtained highest marks in aggregate in the 1st Year M.Sc, Ranchi University, Ranchi.

SKILLS:

Language Proficiency: English, Bengali, Hindi (Read, Write, Speak).

Computer Skills: MSDOS, MSWORD, Excel, C/C++, BASIC, Photoshop, ORIGIN (6.0, 8.0, 9.0).

Instrumentation Skills: PL Spectroscopy, UV Spectrophotometer, X Ray Refractogram, Elemental Analysis Techniques, Thermo Analysis, Fourier Transform Infra Red Spectroscopy, Spark Plasma Sintering Furnace and other High Temperature Furnaces, Field Emission Scanning Electron Microscope, Transmission Electron Microscope, Hardness Tester (Vicker's), Tribometer.

PERSONAL INFORMATION:

DATE OF BIRTH: OCTOBER 13, 1983
RELIGION: Hinduism
NATIONALITY: Indian

LIKES & ACTIVITIES:

- Story book reading.
- Meeting new people.
- Watching Movies.

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