




Government Autonomous College, Rourkela

Faculty Profile

Name	Dr. Sonia			
Designation	Assistant Professor, Grade II			
Department	Chemistry			
Address (Office)	Govt. (A) College, Rourkela			
Address (Residence)	FR-80, NIT Campus, NIT Rourkela, Rourkela			
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Qualifications				
Degree	Institution	Year	Subject Details	
B.Sc.	MDU, Rohtak, Haryana	2003	Chemistry, Botany, Zoology	
M.Sc.	MDU, Rohtak, Haryana	2005	Chemistry	
Ph.D.	NIT Rourkela	2012	Experimental Solid State Chemistry	
Post.Doc	NIT Rourkela	2012-17	Experimental Solid State Chemistry	
B. Ed	MDU, Rohtak, Haryana	2006	Science	
Areas of Interest/ Specialization : Experimental Solid State Chemistry				
Teaching/Research Experience				
Organization/Institution	Designation	Duration	Role	
Govt. Autonomous College, Rourkela	Assistant Professor	24-01-2018 to Present	Teaching and research guiding of UG and PG students	
Course Taught				
Inorganic Chemistry, Physical Chemistry, Organic Chemistry, Nanomaterial Physical Chemistry, Organic Spectroscopy, Physical Chemistry and Instrumentation				
International Collaboration/Consultancy : Prof. D. K. Agrawal, Professor and Director., Microwave Processing & Engineering Center, The Pennsylvania State University Park PA 16802, USA				
List of Ongoing/ Submitted/ Completed Project (Give Details)				
Completed:				
1. Low temperature synthesis of lead free high dielectric constant materials by chemical and microwave processing routes for capacitor applications, Sponsored by DST, India, Duration 2013-2016.				
Projects in hand :-				
Microwave assisted mechano-chemical processing of (i) Functionally graded bio-ceramics for medical and (ii) Lead free piezoelectric ceramics for multifunctional applications, Sponsored by DST, India				

Publications: 22**Publication Details:**

1. Effect of Substrates on Phase Formation in PMN-PT 68/32 Thin Films by Sol-Gel Process, Sonia et.al, **Material Chemistry & Physics 110 (2008) 7–10. [Impact Factor:2.129, ISSN: 0254-0584].**
2. Low Temperature Perovskite Phase Formation in PCT 90/10 System, Sonia et.al, **Applied Surface Science, 255 (2009) 5686–5689. [Impact Factor: 2.538, ISSN: 0169-4332].**
3. Synthesis & Characterization of Isovalent Substituted BaTiO₃ Ceramics by Modified Chemical Route, Sonia et.al, **Integrated Ferroelectrics 118 (2010)106–113.[ISSN: 1058-4587, Impact Factor: 0.38]**
4. Effect of Microwave Processing on Structural, Dielectric and Ferroelectric Properties of Calcium Doped BaTiO₃ Ceramics, Sonia et.al, **J. Ceramic Processing Research, 12 [6] (2011) 634~639.[ISSN 1229-9162, Impact Factor: 0.4]**
5. Effect of Sm and La off-valent Ion Substitution in BT Ceramics Synthesized by Modified Solid State Route, Sonia et.al, **International Journal of Materials Sciences 6 [2] (2011) 133–140. [ISSN Online: 2226-4523, ISSN Print: 2226-4531]**
6. Structural, Dielectric and Ferroelectric Study of Microwave Sintered Lanthanum Substituted BaTiO₃ Ceramics, Sonia et.al, **Material Chemistry & Physics, 130 (2011) 191– 195. [Impact Factor: 2.129, ISSN: 0254-0584].**
7. Dielectric, Ferroelectric and Piezoelectric Properties of (1-x)[K_{0.5}Na_{0.5}NbO₃]-LiSbO₃] Ceramics, Sonia et.al, **Journal of Physics and Chemistry of Solids, 73 (2012) 827–833. [Impact Factor: 1.594, ISSN: 0022-3697]**
8. Low temperature synthesis and dielectric, ferroelectric and piezoelectric study of microwave sintered BaTiO₃ ceramics, Sonia et.al, **Ceramic International 38 (2012) 1585–1589. [Impact Factor: 5.2, ISSN: 0272-8842].**
9. Dielectric and Piezoelectric Properties of Low Temp. Synthesized Iso-Valent Modified BT Ceramics, Sonia et.al, **Ceramic International, 38 (2012) 5597. [Impact Factor: 5.2, ISSN: 0272- 8842].**
10. Synthesis and Characterizations of KNN Ferroelectric Ceramics Near 50/50 MPB, Sonia et.al, **Ceramic International 39 (2013) 65. [Impact Factor: 5.2, ISSN: 0272-8842].**
11. Effect of Sintering Temperature on Dielectric, Piezoelectric and Ferroelectric Properties of BZT- BCT 50/50 Ceramics, Sonia et.al, **J. Alloys & Compounds 545 (2012) 210–215. [Impact Factor: 2.726, ISSN: 0925-8388].**
12. Synthesis and Characterization of Lead-Free Ferroelectric 0.5[Ba(Zr_{0.2}Ti_{0.8})O₃]-0.5[(Ba_{0.7}Ca_{0.3})TiO₃]-Polyvinylidene Difluoride 0–3 Composites, Sonia et.al, **J. Inorg. Organomet. Polym. (2013) 23:539–545. [Impact Factor: 1.077, ISSN: 1574-1443 (print version) ISSN: 1574-1451 (electronic version)] 4**

13. Dielectric and ferroelectric study of KNN modified NBT ceramics synthesized by microwave **processing technique**, Sonia et.al, **Ceramics International** 39 (2013) 3205–3210. [**Impact Factor: 5.2, ISSN: 0272-8842**].

14. Enhanced dielectric and piezoelectric properties of BZT–BCT system near MPB, Sonia et.al, **Ceramics International** 40(2014)14149–14157. [**Impact Factor: 5.2, ISSN: 0272-8842**].

15. High dielectric constant and low optical band gap studies of La-modified Ba(Fe_{0.5}Nb_{0.5})O₃ ceramics, Sonia et.al, **Materials Chemistry & Physics**, 155 (2015) 171- 177. [**Impact Factor: 4.6, ISSN: 0254-0584**].

16. Microwave sintered sol-gel derived BaTiO₃ and Ba_{0.95}La_{0.05}TiO₃ ceramic samples for Capacitor **Applications**, Sonia et.al, **Ceramics International**, 42 (2016) 10587–10592. [**Impact Factor: 5.2, ISSN: 0272-8842**].

17. Synthesis and Characterizations of NaNbO₃ modified BNT-BT-BKT Ceramics for Energy Storage **Applications**, Sonia et.al, **Physica B: Condensed Matter** 497 (2016) 59–66. [**ISSN: 0921-4526, Impact Factor: 1.874**]

18. Structural, Mechanical and Dielectric Properties of Microwave Assisted High Energy Ball Milling Synthesis of Hydroxyapatite, Sonia et.al, **INTEGRATED FERROELECTRICS** 2020, 205, 186–193. **I.F.0.486, Print ISSN: 1058-4587 Online ISSN: 1607-8489**

19. Microwave assisted sol- gel synthesis of high dielectric constant CCTO and BFN ceramics for MLC applications, Sonia et.al, **Processing and Application of Ceramics**, 11 [2] (2017) 154-159, [**Impact Factor: 1.510, ISSN: 1820-6131**].

20. Microstructural, mechanical and electrical properties of BT, BZT-BCT, and BNT-BT-BKT ferroelectrics synthesized by mechanochemical route, Sonia et.al, **Ceramic International**, 47 (2021) 26511–26518. [**Impact Factor: 5.2, ISSN: 0272-8842**].

21. Mechanical, Electrical, and Biological Properties of Mechanochemically Processed Hydroxyapatite Ceramics, Sonia et.al, **Nanomaterials** 11 [9] (2021) 2216. [**Impact Factor: 5.3, ISSN: 2079-4991**].

22. Microstructural, dielectric, mechanical, and biological properties of hydroxyapatite (HAp)/BZT-BCT (0.5Ba(Zr_{0.2}Ti_{0.8})O₃-0.5(Ba_{0.7}Ca_{0.3})TiO₃) bio-composites with improved mechano-electrical properties for bone repair, Sonia et.al, **Ceramic International**, 48 [17] (2022) 24505-24516. [**Impact Factor: 5.2, ISSN: 0272-8842**].

Research Papers:

1. Effect of Substrates on Phase Formation in PMN-PT 68/32 Thin Films by Sol-Gel Process, Sonia et.al, **Material Chemistry & Physics** 110 (2008) 7–10. [**Impact Factor:2.129, ISSN: 0254-0584**].

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(National /International) Seminar/Symposium/Webinar/Workshop/FDP/Orientation/ Refresher/Conference etc organized in capacity of Convener/ Co-convener [In Detail]

1) National Seminar on Recent Advances in Chemistry in December 2018 as Co-convener

2) National Seminar on Recent Trends in Chemistry in December 2019 as Convener

3) National Webinar on Advances in Chemistry for Sustainable Development as Co-convener on 14-03-22

4) National Webinar on Supramolecular Chemistry and BioInorganic Chemistry as Co-convener on 12-04-23

Seminar/Symposium/Webinar/Workshop/FDP/Orientation/ Refresher/Conference etc Attended [In Detail]

1) Induction Training Programme at Utkal University from 24.01.2018 to 07.02.2018

2) Online Refresher Course in Chemistry for Higher Education Faculty by MHRD (Arpit Online Refresher Course)

3) UGC Sponsored 1st One Month Online Guru Dakshta (Faculty Induction Programme) from 18-11- 2020 to 17-12-2020.

4) Refresher course in Advanced Research Methodology from 21-07-23 to 4-08-23

Honors and Awards if any

1) JRF+SRF in DRDO Sponsored Project at NIT Rourkela

2) Extended SRF by CSIR