

## BIO-DATA

1. Name : Dr. SANTOSH BHUKAL
2. Designation : ASSISTANT PROFESSOR
3. Department : BOTANY & ENVIRONMENTAL SCIENCE
4. Date of Birth : 25-07-1985
5. Address for Correspondence : Dept. of Botany & Environmental Science,  
Sri Guru Granth Sahib World University,  
Fatehgarh Sahib-140406
- Mobile : 9569761057, 9017797059
- E-mail : [santosh.bhukal0805@gmail.com](mailto:santosh.bhukal0805@gmail.com)
6. Areas of Specialisation : Wastewater treatment, Nano-ferrite synthesis



### 7. Any other information.

#### i) NET QUALIFICATION:

- National Eligibility Test qualified In June 2008. (Environment Science)

#### ii) Computer Knowledge

- Basic computer Knowledge MS office, Net Assess etc.

### 8. Academic Qualification

S. No.	Degree	Year	Subject	University/Institution	% of marks
1.	10 <sup>th</sup>	2001	Hindi, English, Math, Science, Social Science, Punjabi	Haryana Board	66
2.	12 <sup>th</sup>	2003	Hindi, English, Physics, Chemistry, Biology	Haryana Board	55
3.	B.Sc. (Medical)	2006	Botany, Zoology, Chemistry	Panjab University Chandigarh	60
4.	M.Sc. (Environment Science)	2008	Solid waste Management	Panjab University Chandigarh	71

### 9. Ph. D. thesis title, Institute/Organization/University, Year of Award:

Title: **Synthesis of soft and hard ferrites from industrial waste water and their Characterization**

Institute/Organization/University: **Panjab University Chandigarh**

Year of Award: 2015

## 10. Professional Recognition.

S. No.	Position Held	Name of Award	Awarding Agency	Year
1.	Young Scientist Award	( Best Poster )	Chaudhary Devi Lal University, Sirsa	28th to 30th January 2012
2.	Best Poster	( Certificate of merit )	Panjab university Chandigarh	23 <sup>rd</sup> -24 <sup>th</sup> Feb.2013

## 11. Publications

1. Structural, Electrical and Magnetic Properties of Ni doped Co-Zn Nanoferrites and their Application in Photo-catalytic Degradation of Methyl Orange Dye, **Santosh Bhukal**, Sandeep Bansal and Sonal Singhal, Solid State Phenomena, 232 (2015) 197-211
2. Mg-Co-Zn magnetic nanoferrites: Characterization and their use for remediation of textile wastewater, **Santosh Bhukal**, Rimi Sharma, S. Mor and Sonal Singhal, Superlattices and Microstructure 77 (2015) 134-151.
3. Magnetically separable copper substituted Cobalt-Zinc nano-ferrite photo catalyst with enhanced photo catalytic activity, **S. Bhukal**, Shivali and S. Singhal, Materials Science in Semiconductor Processing, 26 (2014) 467-476
4. Influence of Cd<sup>2+</sup> ions on the structural, electrical, optical and magnetic properties of Co-Zn nanoferrites prepared by sol gel auto combustion method, **S. Bhukal**, S. Mor, J. Singh, S. Bansal and S. Singhal, Journal of Molecular Structure, 1071 (2014) 95-102.
5. Magnetic Mn substituted cobalt zinc ferrite systems: Structural, electrical and magnetic properties and their role in photo- catalytic degradation of methyl orange azo dye, **S. Bhukal**, S. Bansal and S. Singhal, Physica B 445 (2014) 48-55.
6. Co<sub>0.6</sub>Zn<sub>0.4</sub>Cu<sub>0.2</sub>Cd<sub>x</sub>Fe<sub>1.8-x</sub>O<sub>4</sub> (0.2 ≤ x ≤ 0.8) Magnetic ferrite nano-particle: Synthesis, characterization and photo-catalytic degradation of methyl orange, **S. Bhukal**, S. Bansal and Sonal Singhal, Journal of Molecular Structure, 1059 (2014) 150-158.
7. Effect of chromium substitution on the structural, magnetic and electrical properties of nano crystalline Co<sub>0.6</sub>Zn<sub>0.4</sub>Cu<sub>0.2</sub>Cr<sub>x</sub>Fe<sub>1.8-x</sub>O<sub>4</sub> ferrite, Sonal Singhal and **Santosh Bhukal**, Solid State Phenomena, 202 (2013) 173-192.
8. Structural, Electrical, Optical and Magnetic Properties of Chromium Substituted Co-Zn Nanoferrites Co<sub>0.6</sub>Zn<sub>0.4</sub>Cr<sub>x</sub>Fe<sub>2-x</sub>O<sub>4</sub> (0 ≤ x ≤ 1.0) prepared via Sol-gel Auto-combustion Method, **S. Bhukal**, T. Namgyal, S. Mor, Sonal Singhal and S. Bansal, Journal of Molecular

Structure, 1012 (2012) 162-167.

9. Structural, Electrical and magnetic properties of  $\text{Co}_{0.5}\text{Zn}_{0.5}\text{Al}_x\text{Fe}_{2-x}\text{O}_4$  ( $x = 0, 0.2, 0.4, 0.6, 0.8$  and  $1.0$ ) prepared via sol–gel route, Sonal Singhal, Rimi Sharma, Tsering Namgyal, Sheenu Jauhar, **Santosh Bhukal** and Japinder Kaur, *Ceramics International* 38 (2012) 2773-2778.
10. Optical x-ray diffraction and magnetic properties of cobalt substituted nickel chromium ferrites synthesized using sol gel auto combustion method, Sonal Singhal, **S. Bhukal**, Jagdish Singh, Kailash Chandra and S. Bansal, *J. Nano Tech.*, 2011(2011)
11. Structural and magnetic properties of  $\text{BaCo}_x\text{Fe}_{12-x}\text{O}_{19}$  ( $x=0.2, 0.4, 0.6$  ad  $1.0$ ) nano ferrites synthesized via citrate sol-gel method, Sonal Singhal, Kirandish Kaur, Sheenu Jauhar and **Santosh Bhukal**, *World J. Condensed Matter Phys.* 1 (2011) 101-104.

## 12. Complete papers in Conference proceedings

1. Recovery of nickel ion from electroplating wastewater and their use in formation of cobalt zinc nanoferrites, NanoSciTech-2014, 13-15 February 2014 Chandigarh INDIA.
2. Study on Electrical and optical properties cadmium substituted Co-Zn ferrites. *Sonal Singhal and Santosh Bhukal*. NanoSciTech-2012, Feb. 15-18<sup>th</sup> 2012. Chandigarh INDIA.
3. Structural, magnetic, electrical and optical properties of  $\text{Co}_{0.6}\text{Zn}_{0.4}\text{Fe}_2\text{O}_4$  prepared via sol-gel auto combustion route. *Santosh Bhukal, Kirandish Kaur and Sonal Singhal*, ICACNM-2011, Feb. 22-26<sup>th</sup> 2011.
4. Magnetic properties of cobalt substituted nickel chromium ferrites ( $\text{CrCo}_x\text{Ni}_{1-x}\text{FeO}_4$ ,  $x = 0, 0.4$  &  $0.8$ ) synthesized using sol-gel auto combustion method *Santosh Bhukal, Kirandish Kaur and Sonal Singhal*, (Nanotech India 2010) Gokulam Park, Kochi INDIA 19-21 Nov. 2010.

## 13. Contribution to National/International symposia/conferences

1. National Seminar on environment management sustainable development and human health, Fabrication of substituted Co-Zn magnetic nanoferrites using electroplating waste water, Santosh Bhukal, Suman Mor, Sonal Singhal Organized by Chemical Engineering Department Panjab University, Chandigarh, 25<sup>th</sup> march 2015.
2. International Conference on Chemical Engineering - Emerging Dimensions and Challenges Ahead (CHEMCON-2014), Efficient removal of organic pollutants and toxic dyes from synthetic wastewater, employing Magnetic Nano Ferrites, Santosh Bhukal, Suman Mor,

Sonal Singhal, Organized by Chemical Engineering Department Panjab University, Chandigarh, 27-30<sup>th</sup> Dec 2014.

3. International Conference Harnessing engineering, technology and innovation for sustainable development (HETIS-2014), *Substituted Co-Zn nano ferrites prepared from electroplating waste*, Santosh Bhukal, Suman Mor, Sonal Singhal, Organized by Chemical Engineering Department Panjab University, Chandigarh, 19-20 Sept 2014.
4. Regional 8<sup>th</sup> Chascon -2014, Photocatalysis of Cu<sup>+2</sup> substituted cobalt zinc nanoferrite prepared by sol-gel auto combustion route, Shivali, Sonal Singhal and Santosh Bhukal, Organized by Panjab University, Chandigarh Feb. 26-28<sup>th</sup> 2014.
5. Professor Ram Chand Paul National Symposium on New Visions in Chemical Sciences (RCP-2014), *Synthesis, characterization, and magnetic properties of Cu<sup>2+</sup> substituted cobalt zinc nanoferrites prepared by sol gel auto combustion method*, Shivali, Sonal Singhal, Santosh Bhukal Organized by Panjab University, Chandigarh Feb. 15-16<sup>th</sup> 2014.
6. International Conference on Nanotechnology in the Service of Health, Environment and Society (NanoSciTech-2014), *Recovery of nickel ion from electroplating wastewater and their use in formation of cobalt zinc nanoferrites*, Santosh Bhukal and Sonal Singhal Organized by Panjab University, Chandigarh Feb.13-15<sup>th</sup> 2014.
7. Participated in 50<sup>th</sup> annual convention of chemist Organized by Chemistry Department Panjab University, Chandigarh 4-7<sup>th</sup> Dec.2013.
8. National Seminar on Innovative and Sustainable Engineering Dr. S.S. Bhatnagar University Institute of Chemical Engineering & Technology (TEQIP-II), *Structural, magnetic and electrical properties of  $Co_{0.6}Ni_{0.4}Cu_{0.2}Cd_xFe_{1.8-x}O_4$  ( $0.2 \leq x \leq 0.8$ ) prepared by sol-gel process*. Santosh Bhukal, Suman Mor and Sonal Singhal. Organized by Panjab University, Chandigarh 11<sup>th</sup> Nov. 2013.
9. International Conference on Interdisciplinary Areas with Chemical Sciences-2013, *Magnetic properties and dc electrical resistivity studies on cadmium substituted cobalt zinc ferrite  $Co_{0.6}Zn_{0.4}Cu_{0.2}Cd_xFe_{1.8-x}O_4$  ( $0.2 \leq x \leq 0.8$ )* Santosh Bhukal, Suman Mor and Sonal Singhal, Organized by Panjab University, Chandigarh 3<sup>0th</sup> Oct.-1<sup>st</sup> Nov. 2013.
10. Participated in Recent development in functional materials national seminar CEMS-2013, Organized by PEC, Chandigarh, 26<sup>th</sup> April 2013.

11. National Symposium on New Developments in Chemical Sciences RCP-2013, *Preparation of Cobalt-Zinc ferrite by sol gel auto combustion method and study of their cation distribution*, Sonal Singhal, Suman Mor and Santosh Bhukal, Organized by Department of Chemistry, Panjab University, Chandigarh, 23-24 Feb. 2013.
12. International conference on Polymers on the Frontiers of Science and Technology (APA 2013), *Cation distribution of magnesium substituted cobalt zinc ferrites synthesized by sol-gel auto combustion method*, Sonal Singhal and Santosh Bhukal, Organized by UICET, Panjab University, Chandigarh (21<sup>st</sup>-23<sup>rd</sup> Feb. 2013)
13. Recent Advances in chemical and environment Sciences (RACES -2013), *Effect of copper substitution on the electrical and magnetic properties of Co-Zn nanoferrites*, Santosh Bhukal, Suman Mor and Sonal singhal, Organized by Multani Mal Modi college , Patiala 31<sup>st</sup> January 2013.
14. Symposium on Materials Chemistry Interdisciplinary (ISMC-2012), *Synthesis, structural and electrical Properties of  $Co_{0.6}Zn_{0.4}Mg_xFe_{2-x}O_4$  ( $X = 0.2, 0.4, 0.6, 0.8$  And  $1.0$ ) Ferrites Prepared by Sol Gel Auto Combustion Method*, Santosh Bhukal, and Sonal Singhal, Organized by BARC Dec. 11 – 15, 2012.
15. National Symposium on Recent Advances in Chemical Sciences, *Magnetic properties of  $Co_{0.6}Zn_{0.4}Mg_xFe_{2-x}O_4$  ( $X = 0.2, 0.4, 0.6, 0.8$  and  $1.0$ ) ferrites prepared by sol gel auto combustion method*, Santosh Bhukal, Suman Mor and Sonal Singhal, Organized by Panjab University, Chandigarh 20<sup>th</sup> September 2012.
16. UGC Sponsored National Seminar on Green Technologies, Energy Security and Sustainable Development, *Utilization of Industrial Waste Water for Ferrite Synthesis and their Characterization*, Santosh Bhukal, Suman Mor and Sonal Singhal. Organized by Panjab University, Chandigarh Sept. 17<sup>th</sup> 2012.
17. National Conference on Professor Ram Chand Paul (RCP-2012), *Effect of cadmium substitution on electrical and optical properties of Cobalt- zinc nano-material*. Sonal Singhal, Santosh Bhukal and S. Mor, Organized by Chemistry Department Panjab University, Chandigarh, 24-25 February, 2012.
18. International conference Frontiers in Nanoscience, Nanotechnology and their Applications, *Electrical and optical properties study on cadmium substituted Co-Zn ferrites*. Sonal

Singhal, Santosh Bhukal and S. Mor, Organized by Chemical Engineering department of Panjab University 15-18 February 2012.

19. International Conference on Energy-Water-Waste Nexus for Environmental Management (ICEWWNEM - 2012), *Structural, Electrical and Magnetic properties of Zinc ferrites synthesized from industrial waste water*, Sonal Singhal, Santosh Bhukal and S. Mor, Organized by Department of Energy and Environmental Sciences, Chaudhary Devi Lal University, Sirsa on 28<sup>th</sup> to 30<sup>th</sup> January 2012.
20. International conference on innovations in chemistry for sustainable development (ICSD-2011), *Influence of chromium substitution on structural, optical, magnetic and electrical properties of Co-Zn nanoferrites  $Co_{0.6}Zn_{0.4}Cr_xFe_{2-x}O_4$* , Santosh Bhukal, S. Mor and Sonal Singhal, Organized by Department of Chemistry Panjab University, 01-03 December 2011.
21. International Conference on Advance in Condensed and nano-material (ICACNM-2011), *Structural, Magnetic, Electrical and Optical Properties of  $Co_{0.6}Zn_{0.4}Fe_2O_4$  Prepared via Sol - Gel Auto Combustion Route*, Santosh Bhukal, Kirandish Kaur and Sonal Singhal Organized by Department of Physics Panjab University, Chandigarh, 22-26 February, 2011.
22. International Conference on Professor Ram Chand Paul on Emerging Trend in Chemistry, *Structural, electrical and optical properties of  $Co_{0.6}Zn_{0.4}Cr_xFe_{2-x}O_4$  Synthesized via sol gel auto combustion method*, Santosh Bhukal and Sonal Singhal, Organized by Department of Chemistry Panjab University, Chandigarh, 11-12 February, 2011.
23. Nanotech India 2010, *Magnetic properties of cobalt substituted nickel chromium ferrites ( $CrCo_xNi_{1-x}FeO_4$ ,  $x = 0, 0.4$  &  $0.8$ ) synthesized using sol-gel auto combustion method*, Santosh Bhukal, Kirandish Kaur and Sonal Singhal, Organized by Gokulam Park, Kochi on 19-21 November, 2010.
24. Participated in International Conference on Climate Change: Roadmap towards Sustainability for the North, CII Chandigarh held on 9<sup>th</sup> June 2010.

*I solemnly declare that above information is true and correct to the best of my knowledge*

(SANTOSH BHUKAL)