Dr. Anil Kumar Singh

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Current Position: Professor (Since July 2024).

Education:

Visiting Fellow (Tata Institute of Fundamental Research, Mumbai, Dec 2010-July 2011).
Ph.D (Jawaharlal Nehru University, New Delhi, 2011).
M. Sc. (Banaras Hindu University, 2005)

Academic honors and awards:

- Best thesis award at 56th DAE Solid State Physics Symposium 2011 held at SRM University, Kattankulathur, Tamilnadu, India organized by Indian Physics Association (IPA).
- Senior Research Fellow (CSIR) (2009-2011).
- Junior Research Fellow (CSIR) (2007-2009).
- Life Member of Indian Association of Physics Teachers.
- Life member of Indian Science Congress Association.
- Life member of Neutron Scattering Society of India.
- Life member of Magnetics Society of India.

Date of Birth: 05th April, 1983.

Specialization: Experimental Condensed Matter Physics, Material Science, Low temperature Physics

Academic Interests

(i) Synthesis of different multiferroic materials using various techniques like solid state synthesis, sol-gel method, flux method; thin film growth by RF sputtering and pulsed laser deposition techniques.

(ii) Study of magneto-electric coupling and its microscopic origin using neutron diffraction and X-ray diffraction.

(iii) Investigation of novel multiferroic and magnetoelectric materials using transport, electrical, magnetic, thermodynamic and ferroelectric measurement techniques.
(iv) Composite multiferroics, spin frustrated nultiferroics
(v) Photovoltaic solar cell, sensors and memory based applications of multiferroic materials.

Research Publications (Last five years only)

a) Book Chapter

1) Role of Neutron Diffraction in Identifying Stoichiometry and Nonstoichiometry in the Compounds
S. D. Kaushik, **A. K. Singh**
Intech Open, Edited by Speranta Tanasescu, ISSN/ISBN: 978-1-78985-452-7 (2020)
DOI: 10.5772/intechopen.89461
2) Study of Enhanced Magnetodielectricity in Gd^{3+} Substituted $Bi_2Fe_4O_9$
S. R. Mohapatra, Satya N. Tripathy, **A. K. Singh** and S. D. Kaushik
New Trends in Physical Science Research Vol. 2, 71-78 (2022)
DOI: 10.9734/bpi/ntpsr/v2/1955B
Print ISBN: 978-93-5547-638-8, eBook ISBN: 978-93-5547-639-5
3) Structural, Magnetic, and Magnetodielectric Properties of Bi-Based Modified Ceramic Composites,
R. Jena, K. Chandrakanta, and **A. K. Singh**
Intech Open, ISBN: 978-1-80355-865-3 (2022).
DOI: 10.5772/intechopen.106569

b) Journals

1) Tailoring the Multiferroic Response in lead-free Brownmillerite-Ferrite-Based Composites Through Temperature-Dependent Conductivity Profiles.
D. P. Sahu, A. Mohanty, G. Palai, C. Mahapatra, S. D. Kaushik, A. K. Singh
Journal Name: Applied Physics A
2) Unambiguous evidence of room temperature magnetodielectric coupling in Bi2Fe4O9/CoFe2O4 composites.
A. Mohanty, D. P. Sahu, G. Palai, C. Mahapatra, R. Jena, A. K. Singh
Ceramics International
3) Enhanced magnetic properties and room temperature magnetodielectric response in (1-x) $Bi_2Fe_4O_9$ – (x) $La_{0.67}Sr_{0.33}MnO_3$ (x = 0.1-0.3) composites
D. P. Sahu, S. D. Kaushik; A. K. Singh, S. R. Mohapatra
Accepted for publication in Journal of Physics and Chemistry of Solids
4) A Cost-Effective Approach to Fabricate (1-x)$KBiFe_2O_5$-(x)$CoFe_2O_4$ Multiferroic Composites Prepared via citric-assisted sol-gel method
D. P. Sahu; A. Mohanty; G. Palai; K. Chandrakanta; R. Jena; U. K. Goutam; N. Mohapatra; S. D. Kaushik; **A. K. Singh,**
Mater. Res. Bull. 190, 113495 (2025).
DOI:https://doi.org/10.1016/j.materresbull.2025.113495
5) Synthesis, structure and magnetic properties of $Pr_3Ni_2NbO_9$ double perovskite
R Athira, Y Kumar, DP Sahu, **A. K. Singh**, RJ Choudhary, SD Kaushik,
DOI: *Ceram. Int.* 51 (7), 8758-8765 (2025).
https://doi.org/10.1016/j.ceramint.2024.12.306

6) Exploring the correlation between morphology and magnetodielectric properties in $KBiFe_2O_5$-$CoFe_2O_4$ composite
DP Sahu, A Mohanty, G Palai, SD Kaushik, **A. K. Singh,**
AIP Conf. Proc. 3198, 020096 (2025).
DOI: https://doi.org/10.1063/5.0248346
7) A study on the tunable magnetic and magnetodielectric properties of KBFO-CFO composite
DP Sahu, A Mohanty, G Palai, K Chandrakanta, R Jena, SD Kaushik, **A. K. Singh,**
J. Mater. Sci. Mater. Electron 35 (12), 820 (2024).
DOI: https://doi.org/10.1007/s10854-024-12578-5
8) Dielectric relaxation and magnetodielectric responses in $Bi_5Ti_3FeO_{15}/Bi_2Fe_4O_9$ composites
R Jena, K Chandrakanta, DP Sahu, **A. K. Singh,**
AIP Conf. Proc. 2995, 020105 (2024).
DOI: https://doi.org/10.1063/5.0178862
9) Magnetic and dielectric study of $KBiFe_2O_5/CoFe_2O_4$ composite
DP Sahu, K Chandrakanta, R Jena, **A. K. Singh,**
AIP Conference Proceedings. 2995, 020155 (2024).
DOI: https://doi.org/10.1063/5.0178015
10) Intrinsic magnetodielectric coupling in co-substituted $KBiFe_2O_5$ AIP Conference Proceedings (Submitted).
11) Enhanced magnetic, magnetodielectric, and field-dependent magnetoimpedance correlation in the $Bi_5Ti_3FeO_{15}/Bi_2Fe_4O_9$ composites
Rasmita Jena, K. Chandrakanta, D. P. Sahu, M. Jena, S. D. Kaushik, **A. K. Singh,**
J. Magn. Magn. Mater. 580, 170910 (2023).
DOI: https://doi.org/10.1016/j.jmmm.2023.170910
12) Investigation of dielectric, impedance, and magnetodielectric behavior in $Bi_5Ti_3FeO_{15}$–$Bi_2Fe_4O_9$ composites prepared by sol–gel modified method
R. Jena, K. Chandrakanta, and **A. K. Singh,**
Int. J. Mater. Res 114, 320 (2023).
DOI: https://doi.org/10.1515/ijmr-2022-0035
13) Substantial enhancement in magnetic and magnetodielectric properties of $0.7(Bi_2Fe_4O_9)$-$0.3(La_{0.67}Sr_{0.33}MnO_3)$ composite
Archana Rath, S.R. Mohapatra, **A. K. Singh**, S.D. Kaushik, Soumen Dhara, K. Chandrakant, Rasmita Jena, Hari S. Mohanty, Satya N. Tripathy,
J. Magn. Magn. Mater. 578, 170813 (2023).
DOI: https://doi.org/10.1016/j.jmmm.2023.170813
14) Magnetic, Magnetodielectric, and Magnetoimpedance correlations in co-substituted (Co, Ho) $KBiFe_2O_5$ at room temperature,
K. Chandrakanta, R. Jena, D.P. Sahu, **A. K. Singh,**
J. Alloys Compd 938, 168432 (2023).
DOI: https://doi.org/10.1016/j.jallcom.2022.168432
15) Temperature and magnetic field controlled dielectric relaxation and magnetodielectric response in $KBiFe_{1.9}Co_{0.1}O_5$ polycrystalline
K. Chandrakanta, R. Jena and **A. K. Singh,**
Int. J. Mater. Res. 114, 251 (2023).
DOI: https://doi.org/10.1515/ijmr-2022-0076

16) Investigations of room temperature multiferroic and magneto-electric properties of (1-Φ) PZTFT-Φ CZFMO particulate composites
K. Bhoi, Dhiren K Pradhan, K Chandrakanta, N. B. Simhachalam, **A. K. Singh**, P. N. Vishwakarma, A Kumar, Philip D Rack, D. K. Pradhan,
J. Appl. Phys. 133, 024101 (2023).
DOI: https://doi.org/10.1063/5.0120665
17) Signature of magnetodielectric coupling in (0.8)$Bi_5Ti_3FeO_{15}$- (0.2)$La_{0.67}Sr_{0.33}MnO_3$ composites
Rasmita Jena, K. Chandrakanta, Md. F. Abdullah, **A. K. Singh,**
AIP Conf. Proc. 2740, 050001 (2023).
DOI: https://doi.org/10.1063/5.0125892
18) Influence of Ho substitution on structure, dielectric, and magnetodielectric properties of $KBiFe_2O_5$ brownmillerite
K Chandrakanta, R Jena, Md F Abdullah, **A. K. Singh**,
AIP Conf. Proc. 2740, 050002 (2023).
DOI: https://doi.org/10.1063/5.0125865
19) Role of manganite in enhancing dielectric cum magnetic properties of BTFO-LSMO composites
R Jena, K Chandrakanta, P Pal, MF Abdullah, DP Sahu, SD Kaushik, RK Sharma, **A. K. Singh**,
Appl. Phys A 128 (9), 753 (2022).
DOI: https://doi.org/10.1007/s00339-022-05878-2
20) Effect of Holmium substitution on magnetic, dielectric, and magnetodielectric properties of polycrystalline $KBiFe_2O_5$
K Chandrakanta, R Jena, DP Sahu, SD Kaushik, **A. K. Singh**,
Mater. Res. Bull. 155, 111947 (2022).
DOI: https://doi.org/10.1016/j.materresbull.2022.111947
21) Enhanced magnetic and magnetodielectric behavior in morphologically distinct BTFO and LSMO composites
R Jena, K Chandrakanta, MF Abdullah, DP Sahu, SD Kaushik, **A. K. Singh**,
J. Magn. Magn. Mater. 562, 169821 (2022).
DOI: https://doi.org/10.1016/j.jmmm.2022.169821
22) Temperature-dependent magnetodielectric, magnetoimpedance, and magnetic field controlled dielectric relaxation response in $KBiFe_2O_5$
K.Chandrakanta, R.Jena, P.Pal, Md. F.Abdullaha, D. P. Sahu, S.D.Kaushik, **A. K. Singh**,
J. Magn. Magn. Mater. 549, 169047 (2022).
DOI: https://doi.org/10.1016/j.jmmm.2022.169047
23) Evidence of room temperature magnetodielectric and cluster glass behavior of Sr substituted Y-type $Ba_2Mg_2Fe_{11.48}Mn_{0.52}O_{22}$ Hexaferrite
Md. F. Abdullah, S. Devi, P. Pal, K Chandrakanta, R. Jena, S. Mahapatra, C. S. Yadav, and **A. K. Singh**,
J. Magn. Magn. Mater. 552, 169191 (2022).
DOI: https://doi.org/10.1016/j.jmmm.2022.169191
24) Observation of magnetodielectric properties in BTFO-LSMO composites synthesized via sol-gel precursor hybrid technique
Rasmita Jena, K. Chandrakanta, P. Pal, Md.F. Abdullah, **A. K. Singh**,
Mater Today: Proc 50, 837 (2022).
DOI:https://doi.org/10.1016/j.matpr.2021.06.062

25) Study of variation in physical properties of KBiFe2O5 prepared by different synthesis routes and heat treatments
K Chandrakanta, R Jena, P Pal, MF Abdullah, **A. K. Singh,**
Mater Today: Proc 50, 812 (2022).
DOI: https://doi.org/10.1016/j.matpr.2021.06.028
26) Study of Enhanced Magnetoelectricity in Gd^{3+} substituted $Bi_2Fe_4O_9$
SR Mohapatra, SN Tripathy, **A. K. Singh**, SD Kaushik,
New Trends in Physical Science Research 2,71(2022).
DOI: https://dx.doi.org/10.9734/bpi/ntpsr/v2/1955B
27) Investigation of spin-phonon coupling and local magnetic properties in magnetoelectric Fe_2TeO_6
P. Pal, S. Badola, P. K. Biswas, R. R. Das, S. Saha, S. D. Kaushik, P. N. Vishwakarma, **A. K. Singh,**
*J. Magn. Magn. Mater.*540**,** 168512 (2021).
DOI: https://doi.org/10.1016/j.jmmm.2021.168512
28) Room temperature low field strong magnetoelectric coupling and magnetic field induced transition in Y-type $BaSrMg_2Fe_{11.48}Mn_{0.52}O_{22}$ hexaferrite
Md. F. Abdullah, S. Devi, P. Pal, K Chandrakanta, R. Jena, S. Mahapatra, C. S. Yadav, and **A. K. Singh**
J. Appl. Phys. **(Under Review)**
29) d^5 off-centering induced ferroelectric and magnetoelectric correlations in trirutile-Fe_2TeO_6
P. Pal, S. Kaushik, S. Badola, S. Kuila, P. Rajput, S. Saha, P. N. Vishwakarma, and **A. K. Singh,**
J. Appl. Phys. 130, 184101 (2021).
DOI: https://doi.org/10.1063/5.0063548
30) Evaluation of magnetic and intrinsic magnetodielectric coupling in Ni substituted $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrite,
J. of Phys. and Chem. of Solids **(Under review)**
31) Dielectric relaxation and conduction mechanism in Aurivillius ceramic $Bi_5Ti_3FeO_{15}$
Rasmita Jena, K. Chandrakanta, P. Pal, Md. F. Abdullah, S. D. Kaushik & **A. K. Singh,**
Int. J. Miner. Metall. Mater., 28(6), 1063-1071 (2021).
DOI: 10.1007/s12613-020-2091-3
32) Structural, magnetic, and magnetodielectric correlations in multiferroic $Bi_5Ti_3FeO_{15}$
Rasmita Jena, K. Chandrakanta, Md. F. Abdullah, P. Pal, S. D. Kaushik, **A. K. Singh**
J. Mater. Sci. Mater. Electron 32, 21379 (2021)
DOI: https://doi.org/10.1007/s10854-021-06641-8
33) Enhanced magnetic and magnetodielectric properties of Co-doped brownmillerite $KBiFe_2O_5$ at room temperature
K. Chandrakanta, R. Jena, P. Pal, Md. F. Abdullah, S. D. Kaushik and **A. K. Singh**
J. Alloys Compd 886, 161294 (2021)
DOI: https://doi.org/10.1016/j.jallcom.2021.161294
34) Phase transitions and magneto-electric properties of 70 wt. % $Pb(Fe_{0.5}Nb_{0.5})O_3$–30 wt. % $Co_{0.6}Zn_{0.4}Fe_{1.7}Mn_{0.3}O_4$ multiferroic composite
Krishnamayee Bhoi, S. Dsah, S. Dugu, Dhiren K. Pradhan, M. M. Rahaman, N. B. Simhachalam, **A. K. Singh**, P. N. Vishwakarma, R. S. Katiyar, and D. K. Pradhan,
J. Appl. Phys. 130, 114101, (2021)
DOI: https://doi.org/10.1063/5.0060627

35) Significant magnetic, dielectric and magnetodielectric properties of CuO nanoparticles prepared by exploding wire technique
Surendra Singh, Navendu Goswami, S.R. Mohapatra, **A. K. Singh**, S.D. Kaushik,
Mater Sci Eng: B 271, 115301 (2021).
DOI: https://doi.org/10.1016/j.mseb.2021.115301

36) Investigation of phase transition and magnetoelectric response in $0.9(PbFe_{0.5}Nb_{0.5})O_3$ - $0.1Co_{0.6}Zn_{0.4}Fe_{1.7}Mn_{0.3}O_4$ particulate composite
Krishnamayee Bhoi, S. Dash, S. Dugu, Dhiren K. Pradhan, **A. K. Singh,** P. N. Vishwakarma, R. S. Katiyar, Dillip K. Pradhan,
J. Compos. Sci. 11, 3149 (2021).
DOI: https://doi.org/10.1038/s41598-021-82399-7

37) Unravelling the nature of magneto‐electric coupling in room temperature multiferroic particulate $(PbFe_{0.5}Nb_{0.5}O_3)$–$(Co_{0.6}Zn_{0.4}Fe_{1.7}Mn_{0.3}O_4)$ composites
Krishnamayee Bhoi, H. S. Mohanty, Ravikant, Md. F.Abdullah, Dhiren K. Pradhan, S. Narendra Babu, **A. K. Singh**, P. N.Vishwakarma, A. Kumar, R. Thomas, Dillip K. Pradhan,
Sci Rep. 11, 3149 (2021).
DOI: https://doi.org/10.1038/s41598-021-82399-7

38) Exploring weak ferromagnetism and conduction mechanism in the layered oxide $BiPbSr_2MnO_6$
S. R. Mohapatra, B. Sahu, S. D. Kaushik, Gurudayal Behera, **A. K. Singh**
J Mater Sci: Mater Electron 32, 923 (2021)
DOI: https://doi.org/10.1007/s10854-020-04869-4

39) Effect of Co substitution on the Structural, dielectric and Optical properties of $KBiFe_2O_5$
K. Chandrakanta, R. Jena, Pikesh Pal, Md. Faruck Abdullah, S. D. Kaushik, and **A. K. Singh**
Int. J. Miner., Metall. Mater. 28 (11), 1861-1867 (2021)
DOI: 10.1007/s12613-020-2110-4

40) The effect of rare-earth Gd-substitution on the structural, magnetic and specific heat properties in orthorhombic $DyMnO_3$ ceramics
Krishnamayee Bhoi, M. Mishra Patidar, M. Krishnan, Asit Sahoo, K. K. Mishra, **A. K. Singh**, P N Vishwakarma, V Ganesan and Dillip K Pradhan,
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DOI: 10.1088/1361-6463/ab90b3

41) Nickel ferrite embedded polyvinylidene fluoride composite based flexible magneto-electric systems
A. Chaurasiyaa, P. Pal, J. V. Vasa, D. Kumar, S. N. Piramanayagam, **A. K. Singh,** R. Medwal, and R. S. Rawat,
Ceram. Int. 46, 25873 (2020).
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42) Graphene oxide modified superconducting and elastic parameters of YBCO superconductor
Bibekananda Sahoo, **A. K. Singh**, Dhrubananda Behera
Mater Chem Phys 240**,** 122252 (2020).
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43) Enhanced magnetic and room temperature intrinsic magnetodielectric effect in Mn modified $Ba_2Mg_2Fe_{12}O_{22}$ Y-type hexaferrite,
Md F Abdullah, P Pal, K Chandrakanta, R Jena, S Devi, C S Yadav and **A. K. Singh,**
J. Phys. Cond. Matter. 32, 135701 (2020).
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44) Evidence of room-temperature magnetodielectric effect in brownmillerite $KBiFe_2O_5$ through magnetic, complex dielectric, and impedance study
K Chandrakanta, R Jena, P Pal, Md F Abdullah, SR Mohapatra, SD Kaushik, **AK Singh,**
J. Mater. Sci.: Mater. Electron. 31, 15875 (2020).
DOI: https://doi.org/10.1007/s10854-020-04149-1
45) Room temperature magneto-dielectric properties of PFN-CZFMO composite
Krishnamayee Bhoi; Md. F. Abdullah; **A. K. Singh**; P. N. Vishwakarma; Dillip K. Pradhan,
AIP Conf. Proc. 2265, 030535 (2020).
DOI: https://doi.org/10.1063/5.0017473
46) Effect of Oxygen Plasma on Magnetoelectric Properties of $NiFe_2O_4$/PVDF Composites
Avinash Chaurasiya; Rohit Medwal, Joseph V Vas, Mayank Mishra, Paul Lee Choon Keat, Rajdeep S. Rawat, Pikesh Pal, **Anil Kumar Singh,**
2020 IEEE Int. Conf. Plasma Sci. (ICOPS), Singapore, Singapore, 2020, pp. 509.
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47) Investigation of microhardness and superconducting parameters of CNTs blended YBCO superconductor
B. Sahoo, K. L. Routray, G. Ch Mirdha, S. Karmakar, **A. K. Singh**, D. Samal, D. Behera
Ceram. Int. 45, 22055 (2019).
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48) Magnetic and anomalous dielectric behavior of Mn modified $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrite
Md. F. Abdullah, P. Pal, K. Chandrakanta, R. Jena, M. R. Sahoo, P. N. Vishwakarma, **A. K. Singh,**
Physica B 568, 70 (2019).
DOI: https://doi.org/10.1016/j.physb.2019.04.018
49) Doping induced modification in magnetism and magnetoelectric coupling at room temperature in $Fe_2Te_{(1-x)}Nb_xO_6$
P. Pal, Md. F. Abdullah, A. Sahoo, S. Kuila, K. Chandrakanta, R. Jena, P. N. Vishwakarma, S. D. Kaushik, **A. K. Singh,**
Physica B 571, 193 (2019).
DOI: https://doi.org/10.1016/j.physb.2019.06.026
50) Neutron diffraction and short range ordering study in multiferroic $Bi_2Fe_4O_9$
A. K. Singh, S. R. Mohapatra, Preeti Khare, N. Ganguli, A. Wildes, V. Siruguri, S. D. Kaushik
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51) Studies of magnetic phase transitions in orthorhombic $DyMnO_3$ ceramics prepared by acrylamide polymer gel template method
Krishnamayee Bhoi, Tapabrata Dam, S. R. Mohapatra, Manju Mishra Patidar, Durgesh Singh, **A. K. Singh**, P. N. Vishwakarma, PD Babu, V Siruguri, Dillip K Pradhan,
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52) Effects of CNTs blending on the superconducting parameters of YBCO superconductor

Bibekananda Sahoo, S. R. Mohapatra, **A. K. Singh**, D. Samal, and Dhrubananda Behera
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53) Evidence of magneto-dielectric coupling at room temperature in polycrystalline $KBiFe_2O_5$
K. Chandrakanta, P. Pal, Md. F. Abdullah, R. Jena, S. R Mohapatra, S. D. Kaushik, **A. K. Singh**,
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54) Study of dielectric and magnetodielectric properties of Y-type $Ba_2Mg_{1.5}Ni_{0.5}Fe_{12}O_{22}$ hexaferrite
Md. F. Abdullah; P. Pal; S. Patel; K. Chandrakanta; R. Jena; **A. K. Singh**,
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55) The study of magnetic and room temperature magnetoelectric properties of $Fe_2Te_{0.95}Ta_{0.05}O_6$
P. Pal; Md. F. Abdullah; A. Sahoo; M. R. Sahoo; K. Chandrakanta; R. Jena; S. D. Kaushik; **A. K. Singh,**
AIP Conf. Proc. 2162, 020065 (2019).
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56) Substantial magnetoelectric coupling in nanocrystalline-Fe_2TeO_6 at room temperature
P. Pal, Aditi Sahoo, Md. F. Abdullah, S. D. Kaushik, P. N. Vishwakarma, and **A. K. Singh**,
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57) Correlation between orthorhombic distortion with relaxation and Conduction mechanism of Gd^{3+} modified $SrBi_4Ti_4O_{15}$ ceramics
P. Nayaka, **A. K. Singh**,
Ceram. Int. 44, 22840 (2018).
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58) Structural, magnetic and magnetodielectric study in the layered oxide $BiPbSr_2MnO_6$
S. R. Mohapatra, B. Sahu, S. D. Kaushik, **A. K. Singh**,
J Mater Sci: Mater Electron 29, 19985 (2018).
DOI: https://doi.org/10.1007/s10854-018-0128-4

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Md. F. Abdullah, P. Pal, S. Lal, S. R. Mohapatra, K. Chandrakanta, S. D. Kaushik, C. S. Yadav and **A. K. Singh**,
Mater. Res. Express 5, 116101 (2018).
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60) Enhanced antiferromagnetic transition and magnetodielectric study in Cobalt and Holmium co-substituted multiferroic $Bi_2Fe_4O_9$
S. R. Mohapatra, S. D. Kaushik, **A. K. Singh,**
Mater. Res. Express. 5 (1), 016107 (2018).
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61) Structural, Dielectric and Magnetic Studies of Mn doped Y-Type Barium Hexaferrite ($Ba_2Mg_2Fe_{12}O_{22}$)
Md. F. Abdullah, P. Pal, S. R. Mohapatra, C. S. Yadav, S. D. Kaushik, **A. K. Singh,**
AIP Conf. Proc. 1942, 130037 (2018).
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62) Effect of Zr Doping on Structural, Dielectric and Magnetic Properties of Fe_2TeO_6
P. Pal, Md. F. Abdullah, S. R. Mohapatra, S. D. Kaushik, **A. K. Singh,**

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S. R. Mohapatra, P. N. Vishwakarma, S. D. Kaushik, and **A. K. Singh**,
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Deepak Swain, Alongbar Narzary, **Anil Singh**, Amreesh Chandra, T . Nagasawa, S. Yamamoto, Masaya Mitsuishi, S. Rath,
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2. **Effect of Co doping on structural, optical, magnetic and dielectric properties of $Bi_2Fe_4O_9$**
S. R. Mohapatra, B. Sahu, S. D. Kaushik and **A. K. Singh**
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3. **Crystal and magnetic structure of $BiPbSr_2MnO_6$**
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4. **Investigation On Structural, Optical And Magnetic Properties Of Double Perovskite Gd_2NiMnO_6**
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22. **Investigation on structural, optical and magnetic properties of double perovskite Gd_2NiMnO_6**
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23. **Structural, dielectric and magnetic studies on $BiPbSr_2MnO_6$**
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25. **Structural, dielectric and magnetic studies of magnetoelectric trirutile Fe_2TeO_6**
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26. **Structural, optical, dielectric and magnetic investigation on mixed valance $Pb_3Mn_7O_{15}$**
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30. **Evidence Of Magnetoelectric Coupling in $Bi_{2(1-x)}Ho_{2x}Fe_4O_9$ (x=0, 0.01) Ceramic**
S. R. Mohapatra, Md. F. Abdullah, S. D. Kaushik, **A. K. Singh**
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31. **Structural, dielectric and magnetic studies of Fe_2TeO_6 and $Fe_2Te_{0.96}Nb_{0.04}O_6$ ceramics.**
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32. **Structural, dielectric and magnetic correlation in Fe_2TeO_6 and $Fe_2Te_{0.96}Nb_{0.04}O_6$ via neutron diffraction and impedance spectroscopy.**
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34. **Structural, dielectric and magnetic studies of Mn doped Y-type barium hexaferrite ($Ba_2Mg_2Fe_{12}O_{22}$).**
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35. **Doping induced modification in magnetism and magnetoelectric coupling at room temperature in $Fe_2Te_{(1-x)}Nb_xO_6$.**
P. Pal, Md. F. Abdullah, A. Saho, S. Kuila, K. Chandrakanta, R. Jena, P. N. Vishwakarma, S. D. Kaushik, **A. K. Singh**.
Presented at ICMAGMA-2018, 9-13 Dec., will be held in School of Physical Science, NISER-Bhubaneswar, Jatni, Odisha, India.

36. **Evidence of magneto-dielectric coupling at room temperature in polycrystalline $KBiFe_2O_5$**
K. Chandrakanta, P. Pal, Md. F. Abdullah, R. Jena, S. R Mohapatra, S. D. Kaushik, **A. K. Singh**
Presented at 63rd DAE Solid State Physics Symposium held at GJUT, Hisar during 18-22 Dec 2018.

37. **Evidence of magneto-dielectric coupling at room temperature in polycrystalline $KBiFe_2O_5$**
K. Chandrakanta, P. Pal, Md. F. Abdullah, R. Jena, S. R Mohapatra, S. D. Kaushik, **A. K. Singh**
Presented at National Seminar on Advanced Materials for Energy and Environment Applications (AMEEA-2018) held at NIT, Rourkela during 12-14 Dec 2018.

38. **Magnetism and magnetoelectric coupling at room temperature in bulk and nano-Fe_2TeO_6**
P. Pal, **A. K. Singh**
Invited lecture in the National Conference on Advanced Materials for Energy and Environmental Applications (AMEEA-2018) at Department of Chemistry, NIT Rourkela during 12-14 Dec 2018.

39. **Doping induced modification in magnetism and magnetoelectric coupling at room temperature in $Fe_2Te_{(1x)}Nb_xO_6$**
P. Pal, **A. K. Singh**

Presented at International Conference on Magnetic Materials and Applications (ICMAGMA - 2018) held at Bhubaneswar during 9-13 Dec 2018.

40. **Multiferroics: A new way to technology**
    A. K. Singh
    Presented at National Conference on Emerging Trends in Engineering Technology and Management (NCETETM-2019) as a key note speaker at Amity University, Chhattisgarh, Raipur during 12-13 Feb 2019.

41. **Structural, magnetic and magneto dielectric study in the layered oxide $BiPbSr_2MnO_6$**
    A. K. Singh
    Presented at International Conference on Magnetic Materials and Applications (ICMAGMA - 2018) held at Bhubaneswar during 9-13 Dec 2018.

42. **Magnetic and anomalous dielectric behavior of Mn modified $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrite**
    Md. F. Abdullah, **A. K. Singh**
    Presented at International Conference on Magnetic Materials and Applications (ICMAGMA - 2018) held at Bhubaneswar during 9-13 Dec 2018.

43. **Understanding the microscopic origin of polarization and magnetoelectric coupling in Fe_2TeO_6**
    P. Pal, S. D. Kaushik, **A. K. Singh**
    Presented at 7th Conference on Neutron Scattering (Hybrid Mode), November 25-27, 2021 at Anushaktinagar, BARC, Mumbai.

44. **Evidence of Temperature-Dependent Magnetodielectric Effect in $KBiFe_{1.9}Co_{0.1}O_5$**
    K. Chandrakanta, D. P. Sahu, R. Jena, S. D. Kaushik, and **A. K. Singh**
    DAE SSPS 2021

45. **Study of Structure, Dielectric, and Magnetodielectric Properties of Polycrystalline $KBi_{0.95}Ho_{0.05}Fe_2O_5$**
    D. P. Sahu, K. Chandrakanta, R. Jena, S. D. Kaushik, and **A. K. Singh**
    DAE SSPS 2021

46. **Evidence of magnetodielectric coupling in (1-x) $Bi_5Ti_3FeO_{15}$-(x)-$La_{0.67}Sr_{0.33}MnO_3$ (x= 0.0 and 0.1) composites**
    Rasmita Jena, K. Chandrakanta, and **A. K. Singh**
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d) Oral Presentations:

1. **Structure and dielectric property of multiferroic $YMnO_3$.**
   Anil Kumar Singh and S. Patnaik
   Proceeding of 51th DAE Solid State Physics Symposium, page 973 vol 51 (2006).

2. **Dielectric anomaly in lattice mismatched $YMnO_3$ thin film.**
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   Presented at Conference on Mesogenic and Ferroic Materials (CMFM 09) held at Department of Physics, Banaras Hindu University, Varanasi (2009).

3. **On the origin of magneto-electric coupling in hexagonal $YMnO_3$,**
   A. K. Singh, S. D. Kaushik, V. Siriguri and S. Patnaik
   Proceeding of 54th DAE Solid State Physics Symposium, page 1153 vol 54 (2009).

4. **Study of magnetoelectric coupling in geometrically frustrated multiferroics.**
   A. K. Singh. Presented in a seminar at University of Utah, Material Science and Engineering Department, Salt lake City, Utah 84112 USA on 20 Jan 2010.

5. **Ambiguity in crystal structure of possible magnetoelectric $BiPbSr_2MnO_6$**
   B. Sahu, S. R. Mohapatra, S. D. Kaushik, V. Siruguri, **A. K. Singh**
   Presented at MRS Spring Meeting & Exhibit, held at San Francisco, California during 2013-2014.

6. **Ambiguity in crystal structure of possible magnetoelectric $BiPbSr_2MnO_6$**
   B. Sahu, S. R. Mohapatra, S. D. Kaushik, V. Siruguri, **A. K. Singh**
   Presented at Conference on Neutron Scattering, IISER Pune during 10th –12th February 2014.

7. **Doping induced modification in magnetism and magnetoelectric coupling at room temperature in $Fe_2Te_{(1-x)}Nb_xO_6$.**
   P. Pal, Md. F. Abdullah, A. Saho, S. Kuila, K. Chandrakanta, R. Jena, P. N. Vishwakarma, S. D. Kaushik, **A. K. Singh**.
   Presented at ICMAGMA-2018, 9-13 Dec., will be held in School of Physical Science, NISER-Bhubaneswar, Jatni, Odisha, India.

8. **Magnetism and magnetoelectric coupling at room temperature in bulk and nano-Fe_2TeO_6**
   P. Pal, **A. K. Singh**
   Invited lecture in the National Conference on Advanced Materials for Energy and Environmental Applications (AMEEA-2018) at Department of Chemistry, NIT Rourkela during 12-14 Dec 2018.

9. **Doping induced modification in magnetism and magnetoelectric coupling at room temperature in $Fe_2Te_{(1x)}Nb_xO_6$**
   P. Pal, **A. K. Singh**
   Presented at International Conference on Magnetic Materials and Applications (ICMAGMA - 2018) held at Bhubaneswar during 9-13 Dec 2018.

10. **Multiferroics: A new way to technology**
    A. K. Singh
    Presented at National Conference on Emerging Trends in Engineering Technology and Management (NCETETM-2019) as a key note speaker at Amity University, Chhattisgarh, Raipur during 12-13 Feb 2019.

11. **Magnetic and anomalous dielectric behavior of Mn modified $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrite**
    A. K. Singh, Presented at International Conference on Functional Nanomaterials held at Department of Physics, IIT (BHU) Varanasi during 22-25 Feb 2019.

12. Effect of Ho Substitution on Structure, Dielectric, and Magnetodielectric Properties of KBiFe2O5 Brownmillerite
    K. Chandrakanta, **A. K. Singh**
    Presented at 2nd International Conference on Emerging Smart Materials in Applied Chemistry (ESMAC-2021) held at KIIT Bhubneshwar during 3 – 5 December, 2021.

13. Understanding microscopic origin of polarization and magnetoelectric coupling in Fe_2TeO_6
    P. Pal, S. D. Kaushik and A. K. Singh

Presented in the 7th Conference on Neutron Scattering (CNS-2021) held in hybrid mode in Mumbai organized by Bhabha Atomic Research Center and Neutron Scattering Society of India during 25-27 November 2021.

14. Magnetic field-induced magnetodielectric coupling and dielectric relaxation response in $KBiFe_2O_5$,
A. K. Singh
Presented in Indo-Japan Workshop on Interface Phenomena for Spintronics, held at (NISER, Bhubaneswar) (IJW-IPS 2022) during 8-9 March 2022.

15. Tuning of dielectric, magnetic, magnetodielectric, and magnetoimpedance properties of Aurivillius based composites
A. K. Singh
Presented at National Seminar on "Innovations in Functional Materials" May 29-30, 2023, Department of Physics, MSCBU, Odisha

PG Dissertation:

1. Ms. Sangeeta Kumari Ghauary (411ph2092) {2012-13 Spring}
2. Ms. Smita Swain (411PH2120) {2012-13 Spring}
3. Ms. Tushar Prava Mahanta (411PH2098) {2012-13 Spring}
4. Aakanksha Sahu (412PH2111) {2013-14 Spring}
5. Jnaneswar Kheti (412PH2100) {2013-14 Spring}
6. Gurudayal Behera (414PH2045) {2015-16 Spring}
7. Mekap Subhasish Pattanaik (411PH5116) {2015-16 Spring}
8. Abhinav Mahapatra (416PH2109), {2017-18 Spring}
9. Ashutosh Anand (416PH2099), {2017-18 Spring}
10. Asmita Priyadarshini (413PH5064) {2017-18 Spring}

11. Deepak Rai (418PH2119) Structural, dielectric and optical studies of Ho doped KBFO (2019-20 Spring)

Summer Internship:

1. Poonam Chakra, C.V. Raman College of Engineering, BBSR (2018).
2. Sagarika Sahoo, C. V. Raman College of Engineering, BBSR (2018).

Member of Editorial Board and organizing committee:

1. Members of the Editorial Board of the "Journal of Materials Science and Nanomaterials",

Sponsored Projects handled

Sl. No.	Title of the project	Funding agency	Total Financial outlay	Year of start & total period
1	Engineering novel multifunctional multiferroic materials with substantial magnetoelectric coupling	DST	27.6 Lakhs	2014
2	Doping induced modification of magnetoelectric order parameter in spin frustrated $Bi_2Fe_4O_9$	BRNS	29 Lakhs	2013
3	Search for multiferroicity and its microscopic origin in $BiPbSr_2XO_6$ (X=Mn, Fe, Co).	UGC-DAE-CSR	1.5 Lakhs	2013
4	Structural Magnetic and microscopic correlation in magnetoelectrical $Fe_2Te_{1-x}R_xO_6$(R=Nb, Ta) (CRS-M-225)	UGC-DAE-CSR	14.52Lakhs	2016
5	Understanding low magnetic field control of ferroelectric polarization and its microscopic origin in Y-type hexaferrites (CRS/2021-22/03/585)	UGC-DAE-CSR	2.3 Lakhs	2022

Ph.D. Thesis supervised:

1. Dr. S. R. Mohapatra (2018)
   Thesis Title: Substitution induced modification in structural, magnetic and magnetodielectric properties of $Bi_2Fe_4O_9$
2. Mr. Piekesh Pal (2021, Submitted)
   Thesis Title: Structural, magnetic, and magnetoelectric correlation in bulk, nano, and doping modified trirutile Fe_2TeO_6
3. Md. Faruck Abdullah (2021, Submitted)
   Thesis Title: Magnetic, magnetodielectric and lattice dynamic effect on chemically substituted multiferroics

Reviewer Assignment:

2020

1. Physica B
2. Materials Today Chemistry
3. Scientific report
4. Journal of Materials Chemistry C
5. Journal of Materials Science: Materials in Electronics
6. Applied Surface Science Advances
7. Chaired a session in International E- Conference on "RECENT ADVANCES IN PHYSICS: A PROMISE TO SOCEITY" conducted by Government P. G. College Bazpur U.S. Nagar Uttarakhand India during 24-25 JUNE 2020.

2021

1. DAE SSPS 2021 paper evaluation.
2. Project evaluation committee member of Czech Science Foundation
3. Reviewer of Journal of Materials Chemistry C
4. Reviewer of Applied Surface Science Advances
5. Reviewer of Journal of Materials Science: Materials in Electronics (JMSE)

2022

1. Reviewer of Journal of Applied Physics
2. Reviewer of Journal of Materials Science: Materials in Electronics (JMSE)
3. Organized her Ghar Tiranga Campaign at NITR
4. Nodal Officer for Swachhata Campaign 2.0
5. Project evaluation committee member of Czech Science Foundation

6. Science exhibition Judge of GNPS organized in 2022

2023

1. Reviewer of Journal of Physics A: Mathematical and Theoretical
2. Reviewer of Journal of SSC
3. Reviewer of Science and Engineering Research Board (SERB) project
4. Reviewer of Sensors and Actuators B: Chemical
5. Reviewer of Thin Solid Films
6. One of the organizing committee member of Yuva Sangam
7. One of the ordanizing committee member of G-20 event
8. Coordinator ISRO START programme
9. DAE SSPS paper evaluation
10. Project evaluation committee member of Czech Science Foundation
11. Science exhibition Judge of GNPS organized in 2023
12. Nodal officer of Swacchata hi Sewa Campaigain during 15 Sept-02 October 2023
13. Nodal officer of Special Campaign 3.0 for institutionalizing Swacchata
14. Organized Meri Maati Mera Desh campaigain
15. Organized Har Ghar Tiranga Campaigain from 13th August to 15th August