

## BIO-DATA

### PERSONAL DETAILS

**Name & Present Position: Dr. NARENDRA KUMAR SINGH**  
(Assistant Professor)  
Department of Chemistry  
Faculty of Science  
University of Lucknow, Lucknow-226007  
INDIA



**Coordinator:** Institute of Food Processing and Technology  
ONGC Centre of Advanced Studies  
University of Lucknow, Lucknow-226007

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Mobile: +91-9451949105 & 7985105068

**Date of Birth** : 15<sup>th</sup> August, 1969

**Father's Name** : Late Deoraj Singh

**Marital Status** : Married

**Nationality & Religion** : Indian, Hindu

**Language Known** : Hindi, English

### EDUCATIONAL AND PROFESSIONAL DETAILS

#### 1. Employment Details

Sl. No.	Name of the Institution	Position	Duration	Work responsibility
1.	Indian Institution of Carpet Technology (IICT), Bhadohi	Chemical Lab In-charge	10.03.2002-06.08.2005	Teaching (UG) and Chemical Lab. Management
2.	Govt. P. G. College, Gopeshwar, Chamoli	Assistant Professor	10.08.2005-10.05.2007	Teaching UG, PG & Research
3.	University of Lucknow, Lucknow	Assistant Professor	11.05.2007-Continue	Teaching UG, PG & Research

#### 2. Educational Qualification

**B. Sc. (PCM):** 1991 from Udai Pratap Autonomous College, Varanasi

**M. Sc. (Physical Chemistry):** 1993 from Udai Pratap Autonomous College, Varanasi

**Ph. D. (Electrochemistry):** 1998 from Banaras Hindu University, Varanasi

**Topic:** *Low Temperature Synthesis and Characterization of Some Mixed Oxides for Electrocatalysis of Oxygen Evolution in Alkaline Solutions*

### 3. Fellowships/Awards

- Banaras Hindu University *Research Scholarship* (1994-1997)
- *Senior Research Fellowship* (SRF): CSIR, New Delhi (March 1997- March 2000)
- *Research Associate* (RA): CSIR, New Delhi (Nov. 2000 – March 2003)
- *Prof. S.T. Nandibewoor Award* for best Oral Presentation in the 33<sup>rd</sup> Annual National Conference of Indian Council of Chemists held at Department of Applied Chemistry, ISM, Dhanbad in 2014

4. **Research Interests:** Synthesis of Nano-materials (Spinel and Perovskites), Electrocatalysis, Fuel Cells, Water Electrolysis, Alcohol Fuel cells, Supercapacitors

### 5. Projects

**Completed:** SERB (DST), New Delhi 19.68 lakhs (3.5 years)  
R&D, U.P. Government) 03 Lakhs (01 year)

**Ongoing:** (i) as Co- Principal Investigator: 01 (UPCST, Lucknow) 10.44 Lakhs (3 years)  
(ii) as Co- Principal Investigator: 01 (R&D, U.P. Government) 4.86 Lakhs (01 years)

6. **Ph. D.:** **Produced: 03 Pursuing: 05** (Under Guidance: 04 and Under Co-guidance: 01)  
**M. Sc. Dissertation: 07** (working)

7. **Conferences:** **Total- 33** **Last five years: 22**

**Invited - 08** (International within India - 04, National - 04)

**Paper Presented – 25** (International within India - 18, Outside India – 01, National - 06)

**Conference Organized: 05** (in the capacity of Convener, Organizing Secretary and Treasurer)

### 8. Membership of Professional Bodies

- Life member of *Indian Society of Analytical Scientists, ISAS (LMT-2008/146)*
- Life member of *Indian Science Congress Association, Kolkata (L25663)*
- Annual Member of *Hydrogen Association of India, IOCL, Faridabad*
- Five years membership of *International Association of Advanced Materials, IAAM (IN-150869-191-111)*

### 9. Refresher/Faculty Development Programme Attended

- e-Faculty Development Program on “*Emerging Teaching Learning and Research (ETLR-2020)*” organized by GLA University, Mathura (28 Sept.- 03 Oct., 2020)
- Faculty Development Program on “*Recent Trends in Materials Science and Engineering*” organized by Sharda University, Greater Noida (25-31 May, 2020)
- Short-Term Course on Research Methodology: organized by HRDC, Lucknow University (15-21 June 2017)
- Refresher Course in Environmental Studies: organized by HRDC, Lucknow University (11-30 July 2016)
- Refresher Course in Chemistry: organized by UGC Academic Staff College, Lucknow University, Lucknow (01-21 March, 2013)
- Refresher Course on Biochemistry/ Bio-technology/ Chemistry (ID): organized by UGC Academic Staff College, Lucknow University (27<sup>th</sup> Jan., 2012 – 18<sup>th</sup> Feb., 2012)

- Faculty Development Programme: organized by Department of Higher Education, Uttarakhand government and ICFAI University, Dehradun (02-16 April, 2006)
- 41<sup>st</sup> Orientation Course: organized by UGC Academic Staff College, BHU, Varanasi (28<sup>th</sup> Dec., 2005 – 24<sup>th</sup> Jan., 2006)

#### 10. Administrative Assignments

- Coordinator, Institute of Food Processing and Technology (since Sept., 2020)
- Assistant Coordinator, Institute of Food Processing and Technology (2015-2017)
- Member of Board of Studies and Faculty Board
- Member, Departmental Quality Assurance Cell (DQAC) (since January, 2020)
- In-charge of FTIR laboratory of the Department of Chemistry, University of Lucknow
- Assistant Director, Counselling and Placement Cell (since July, 2020)
- President, Swimming Club (LUAA) (2019-2022)
- Assistant Provost and Provost, Birbal Sahani and Subhas Hostel (since 2011)
- Assistant Coordinator UG, PG, and Ph.D. admission during sessions 2010-11, 2011-12, 2012-13
- Assistant Superintendent and Superintendent of Examination
- Head examiner to conduct the Chemistry Practical Examination in the affiliated colleges (since 2016)
- Worked as Operation Manager (Chemical Laboratory) for the implementation of ISO and NABL in IICT, Bhadohi during 2003-2005
- In-charge departmental library, member student's union election committee at Government P. G. College, Gopeshwar, Chamoli, Uttarakhand.

#### 11. Participated Training Programme related to ISO/ NABL

- Training Course on *Internal Audit*: organized by IICT, Bhadohi (27 -29 April, 2005)
- Training programme on *Testing & Calibration of Testing Equipments* (as per NABL): organized by Textile Committee, New Delhi (01-06 Nov, 2004)
- Training Course on *Statistical Techniques*: organized by IICT, Bhadohi (15-17 Sept, 2004)
- Training programme on *Laboratory Quality System, Internal Audit and ISO/IEC/17025*: at IIQM, Jaipur (08-11 Oct., 2003)
- Training programme on *Total Quality Management and Intellectual Property Rights*: at TTTI, Chandigarh (01-05 Sept., 2003)
- Training programme on Physical, Chemical and NABL Certification: Textile Committee, Mumbai (14-29 July, 2003)

**12. Publications: Total paper published/ Accepted: 37 (Citations: 664, h-index: 12; i10: 13) Communicated/Under review: 01**

Sl. No.	Title/Authors with Page No.	Journal	Impact Factor
1.	Rock varnish as a biochemical platter: An analogue for the Mars coevolution studies, A.S. Chaddha, Anupam Sharma, N. K. Singh, S. N. Ali, P. K. Das, S. K. Pandey, B. Phartiyal, Subodh Kumar	Astrobiology (Under review)	<b>4.335</b>
2.	Fabrication of $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> nanostructures: Synthesis, Characterization and its promising application in treatment of carcinomas A-549 lung cancer cells. Indresh Kumar, Rashmi Nayak, Sheo K. Mishra, <b>Narendra Kumar Singh</b> , Abhishek Srivastava, Surendra Prasad, Radhey Mohan Naik	ACS Omega (Accepted)	<b>3.512</b>

Sl. No.	Title/Authors with Page No.	Journal	Impact Factor
3.	Comparative Phytochemical Investigation and Antioxidant Activity in Different Parts of Acacia Nilotica Seed. Geetendra Kumar, <i>N. K. Singh</i> Manjoosha Srivastava, 84(3) (2022) 552-559.	Indian J Pharma Sci.	<b>0.970</b>
4.	Silver nanoparticles fabricated by tannic acid for their antimicrobial and anticancerous activity. Chinky Gangwar, Bushra Yassen, Rashmi Nayak, Shama Praveen, <i>Narendra Kumar Singh</i> , Joy Sarkar, Monisha Banerjee, Radhey Mohan Naik, 141 (2022) 109532	Inorganic Chemistry Communications	<b>2.495</b>
5.	Birnessite-clay mineral couple in Rock Varnish: A nature's electrocatalysts. Amritpal Singh Chaddha, <i>Narendra Kumar Singh</i> , Manisha Malviya, Anupam Sharma, 6 (2022) 2553-2569	Sustainable Energy and Fuels	<b>6.367</b>
6.	Strontium substituted SmNiO <sub>3</sub> : Novel electrode materials for alkaline water electrolysis. Reena Parihar, Priya Sharma, Amritpal Singh Chaddha and <i>Narendra Kumar Singh</i> , 24 (2021) 201-207	J. New Mat. Electrochem. System	<b>0.720</b>
7.	Clay minerals identification in Rock Varnish by XRD: A one step reduction approach. Amritpal Singh Chaddha, Anupam Sharma and <i>Narendra Kumar Singh</i> , 8 (2021) 101511	MethodsX	<b>1.837</b>
8.	A growth kinetic study of tannic acid-mediated monodispersed silver nanoparticles synthesized by chemical reduction method and its characterization. Chinky Gangwar, Bushra Yaseen, Indresh Kumar, <i>Narendra Kumar Singh</i> , Radhey Mohan Naik, 6 (2021) 22344-22356	ACS Omega	<b>3.512</b>
9.	Oxygen evolution electrocatalytic properties of perovskite-type oxides obtained by PVP sol-gel route: Part II. The effect of partial substitution of Sm for Sr in La <sub>0.4</sub> Sr <sub>0.6</sub> CoO <sub>3</sub> . <i>Narendra Kumar Singh*</i> , Priya Sharma, Manish Kumar Yadav and Reena Parihar, 15 (2020) 7001-7012	Int. J. Electrochem. Sci	<b>1.765</b>
10.	Low Temperature Synthesis of spinel-type Co <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> (0 ≤ x ≤ 1.5) Oxide and its Application for Oxygen Evolution Electrocatalysis in Alkaline Solution. <i>Narendra Kumar Singh*</i> , Manish Kumar Yadav, Reena Parihar and Indresh Kumar, 15 (2020) 6605-6619	Int. J. Electrochem. Sci	<b>1.765</b>
11.	Egg-White Mediated Sol-Gel Synthesis of Cobalt Ferrites and Their Electrocatalytic Activity Towards Alkaline Water Electrolysis. <i>Narendra Kumar Singh*</i> , Manish Kumar Yadav, Reena Parihar and Chinky Gangwar, 23 (2020) 87-93	J. New Mat. Electrochem. System	<b>0.720</b>
12.	Low Temperature Synthesis and Characterization of Ni <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> (0 ≤ x ≤ 1.5) Electrodes for Oxygen Evolution Reaction in Alkaline Medium. Manish Kumar Yadav, Chinky Gangwar and <i>Narendra Kumar Singh*</i> 23 (2020) 78-86	J. New Mat. Electrochem. System	<b>0.720</b>
13.	Oxygen evolution electrocatalytic properties of perovskite-type La <sub>1-x</sub> Sr <sub>x</sub> CoO <sub>3</sub> (0 ≤ x ≤ 0.8) oxides obtained by polyvinylpyrrolidone sol-gel route. <i>Narendra Kumar Singh*</i> , Priya Sharma, Indresh Kumar and Amritpal Singh Chaddha, 14 (2019) 11379-11390	Int. J. Electrochem. Sci.	<b>1.765</b>
14.	Electrocatalytic properties of La <sub>1-x</sub> Cu <sub>x</sub> CoO <sub>3</sub> (0 ≤ x ≤ 0.8) film electrodes for oxygen evolution in alkaline medium: Part II. A comparative study. Manish Kumar Yadav, Basant Lal, <i>Narendra Kumar Singh*</i> 58A (2019) 1295-1301	Ind. J. Chemistry Sec.- A	<b>0.491</b>
15.	Synthesis and Electrocatalytic Properties of Ni-substituted Co <sub>3</sub> O <sub>4</sub> for Oxygen Evolution in Alkaline Medium. Basant Lal*, Ravindra Nath Singh and <i>Narendra Kumar Singh*</i> 21 (2018) 163-170	J. New Mat. Electrochem. System	<b>0.720</b>
16.	Electrocatalytic activity of Ni <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> (0 ≤ x ≤ 1.5) film electrode for oxygen evolution in KOH solutions. Ritu Yadav and <i>Narendra Kumar Singh*</i> , 25 (2018) 189-195	Ind. J. Chemical Technology	<b>0.570</b>
17.	Effect of Co-substitution on the Electrocatalytic Properties of Ni <sub>1.5</sub> Fe <sub>1.5</sub> O <sub>4</sub> for Oxygen Evolution in Alkaline Solutions. <i>N. K. Singh*</i> , Ritu Yadav, M. K. Yadav and Carlos Fernandez, 20 (2017) 115-121	J. New Mat. Electrochem. System	<b>0.720</b>

Sl. No.	Title/Authors with Page No.	Journal	Impact Factor
18.	Electrocatalytic Properties of $\text{La}_{1-x}\text{Cu}_x\text{CoO}_3$ ( $0 \leq X \leq 0.8$ ) Film Electrodes Prepared by Malic Acid Sol -Gel Method at pH = 3.75. <b>N. K. Singh*</b> , M. K. Yadav and Carlos Fernandez, 12 (2017) 7128-7141	<i>Int. J. Electrochem. Sci.</i>	<b>1.765</b>
19.	Electrocatalytic properties of novel egg-white sol-gel derived $\text{Mn}_x\text{Fe}_{3-x}\text{O}_4$ ( $0 \leq x \leq 1.5$ ) for alkaline water electrolysis. <b>N. K. Singh*</b> , Ritu Yadav and M. K. Yadav, 19 (2016) 209-215	<i>J. New Mat. Electrochem. System</i>	<b>0.720</b>
20.	Synthesis and Electrocatalytic Properties of $\text{La}_{1-x}\text{Sr}_x\text{CoO}_3$ ( $0 \leq x \leq 0.8$ ) Film Electrodes for Oxygen Evolution in Alkaline Solutions. Manish Kumar Yadav, Ritu Yadav, Priya Sharma and <b>N. K. Singh*</b> , 11 (2016) 8633-8645	<i>Int. J. Electrochem. Sci.</i>	<b>1.765</b>
21.	Electrocatalytic Activity of $\text{Ni}_x\text{Fe}_{3-x}\text{O}_4$ ( $0 \leq x \leq 1.5$ ) Obtained by Natural Egg Ovalbumin for Alkaline Water Electrolysis, Ritu Yadav, Jhasaketan and <b>N. K. Singh*</b> , 10 (2015) 9297-9309	<i>Int. J. Electrochem. Sci.</i>	<b>1.765</b>
22.	Electrocatalytic properties of cobalt ferrites obtained by glycine sol-gel route for oxygen evolution in alkaline medium. Ritu Yadav and <b>Narendra Kumar Singh*</b> , 54A (2015) 1221-1225	<i>Ind. J. Chemistry Sec.- A</i>	<b>0.491</b>
23.	Electrocatalytic Properties of Sol-Gel Derived Spinel $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$ ( $0 \leq x \leq 1.5$ ) electrodes for oxygen in alkaline solution, Ritu Yadav, M. K. Yadav and <b>N. K. Singh*</b> , 8 (2013) 6321-6331	<i>Int. J. Electrochem. Sci.</i>	<b>1.765</b>
24.	Synthesis, structure, catalytic and calculated non-linear optical properties of cis- and trans-mer-chlorobis (triphenyl phosphene/ triphenyl arsine-dipicolinato rutheniumIII complexes. Manoj Trivedi, R. Nagrajan, Abhinav Kumar, <b>Narendra K Singh</b> and Nigam P Rath, 994 (2011) 29-39	<i>J. Molecular Structure</i>	<b>3.196</b>
25.	Effect of partial substitution of Cr on electrocatalytic properties of $\text{CoFe}_2\text{O}_4$ towards $\text{O}_2$ -evolution in alkaline medium. R. N. Singh, <b>N. K. Singh</b> , J. P. Singh, G. Balaji and N. S. Gajbhiye, 31 (2006) 701-707	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>
26.	Electrocatalytic properties of new active ternary ferrite film anodes for $\text{O}_2$ evolution in alkaline medium. R. N. Singh, <b>N. K. Singh</b> and J. P. Singh, 47 (2002) 3873-3879	<i>Electrochimica Acta</i>	<b>6.901</b>
27.	Sol-gel derived spinel $\text{Co}_3\text{O}_4$ films and oxygen evolution: Part II Optimization of preparation conditions for enhanced electrocatalytic activities and influence of the nature of the metal salt precursor. <b>N. K. Singh</b> , J. P. Singh and R. N. Singh, 27 (2002) 895-903	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>
28.	Electrocatalytic properties of perovskite-type $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ obtained by novel sol-gel route for $\text{O}_2$ evolution in KOH solutions. <b>N. K. Singh</b> , B. Lal and R. N. Singh, 27 (2002) 885-893	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>
29.	Electrocatalytic properties of Sr-doped $\text{LaMnO}_3$ obtained by a new sol-gel route in relation to $\text{O}_2$ evolution in alkaline solution. B. Lal, <b>N. K. Singh</b> and R. N. Singh, 40A (2001) 1269-1276	<i>Ind. J. Chemistry Sec.- A</i>	<b>0.491</b>
30.	Sol-gel derived spinel $\text{M}_x\text{Co}_{3-x}\text{O}_4$ (M = Ni, Cu; $0 \leq x \leq 1$ ) films and oxygen evolution. R. N. Singh, J. P. Pandey, <b>N. K. Singh</b> , B. Lal, P. Chartier and J. F. Koenig, 45 (2000) 1911-1919	<i>Electrochimica Acta</i>	<b>6.901</b>
31.	Electrocatalytic activity of metal substituted $\text{Fe}_3\text{O}_4$ obtained at low temperature for $\text{O}_2$ evolution. J. P. Singh, <b>N. K. Singh</b> and R. N. Singh, 24 (1999) 433-439	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>
32.	Electrocatalytic properties of spinel-type $\text{Ni}_x\text{Fe}_{3-x}\text{O}_4$ synthesized at low temperature for oxygen evolution in KOH solutions. <b>N. K. Singh</b> and R. N. Singh, 38A (1999) 491-495	<i>Ind. J. Chemistry Sec.- A</i>	<b>0.491</b>
33.	Electrocatalytic properties of $\text{Cu}_x\text{Co}_{3-x}\text{O}_4$ ( $0 \leq x \leq 1$ ) obtained by a new precipitation method for oxygen evolution. B. Lal, <b>N. K. Singh</b> , S. Samuel and R. N. Singh, 2 (1999) 59-64	<i>J. New Mat. Electrochem. System</i>	<b>0.720</b>
34.	Electrocatalytic properties of Lanthanum manganites obtained by a novel malic acid-aided route. <b>N. K. Singh</b> , S. K. Tiwari and R. N. Singh, 23 (1998) 775-780	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>

Sl. No.	Title/Authors with Page No.	Journal	Impact Factor
35.	Electrocatalytic properties of La-manganites prepared by low temperature synthesis. T. Sharma, <b>N. K. Singh</b> , S. K. Tiwari and R. N. Singh, 5 (1998) 38-42	<i>Ind. J. Engg. &amp; Mat. Science</i>	<b>0.881</b>
36.	Electrocatalytic activity of high specific surface area perovskite-type LaNiO <sub>3</sub> via sol-gel for electrolytic oxygen evolution in alkaline solutions. R. N. Singh, S. K. Tiwari, S. P. Singh, A. N. Jain and <b>N. K. Singh</b> , 22 (1997) 557-562	<i>Int. J. Hydrogen Energy</i>	<b>5.816</b>
37.	Synthesis of (La,Sr)CoO <sub>3</sub> perovskite films via a sol-gel route and their physicochemical and electrochemical surface characterization for anode application in alkaline water electrolysis. R. N. Singh, S. K. Tiwari, S. P. Singh, <b>N. K. Singh</b> , G. Poillerat and P. Chartier, 92(14) (1996) 2593-2598	<i>J. Chem. Soc. Faraday Trans. (Now PCCP)</i>	<b>3.767</b>
38.	Electrocatalytic properties of spinel-type Mn <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> synthesized below 100°C for oxygen evolution in KOH solutions. <b>N. K. Singh</b> , S. K. Tiwari, K. L. Anitha and R. N. Singh, 92(13) (1996) 2397-2400	<i>J. Chem. Soc. Faraday Trans. (Now PCCP)</i>	<b>3.767</b>
<b>Total</b>			<b>103.017</b>

  
**(Dr. N. K. Singh)**