

1. **Name** **Dr. PANKAJ KALRA**
2. **Designation** **Associate Professor**
3. **Date of Birth** **Sept.08,1975**
4. **Present Pay Scale** **37400-67000+ 9000 AGP (Unrevised)**



pankajkalra75@gmail.com

5. **Educational Qualifications**
 - ✓ Ph.D (Chemical Engg),
IKG Punjab Technical University,
Jalandhar
 - ✓ M.Tech.(Chemical Engg)
IKG Punjab Technical University,
Jalandhar
 - ✓ B.E. (Chemical Engg.),
Panjab University
Chandigarh

6. **Work Experience** **Teaching & Administrative Experience:26 years**
Teaching Experience:

- ❖ Assoc. Prof. at S.B.S. State University, Ferozepur (formerly SBSSTC) 18.07.2014 to till date
- ❖ Assistant Prof.at S.B.S.State University, Ferozepur 17.07.2000 to 17. 07.2014
- ❖ Lecturer (Adhoc) at S.B.S. State University, Ferozepur (formerly SBSSTC) 13.10.1999 to 05.05.2000

Industrial Experience:

- Management Trainee in Nahar Sugar And Allied Industries Ltd., Khanna 1 year
- Shift Engineer in Pure Foods Ltd., Abohar 1 year

Administrative Responsibilities (Institute Level):

- Director IQAC, SBSSU, Ferozepur: 27/08/2022 to till date
- Head of Deptt. (Chemical Engg.): 27/01/2025 to till date
- Chairperson Institute Souvenir Committee.: 13 years (Sept. 2006 to Sept. 2019)
- Group Photograph for final year students : Organization of Photo-Session : 13 years
- Warden Yamuna Bhawan Boys Hostel: 3 years
- Convocation committee: Representative Member of Chemical Dept. : 2 years
- Co-ordinator NAAC Committee for AQAR submission : 2 years
- Block Incharge: C- Block Ground floor: 4 years

Administrative Responsibilities (Department level):

- Deptt. Academic Incharge: 10 years
- TPI CHE: worked for four terms (total 8 years).
- Teacher-Incharge of Chemical Engg. Students Society (ChESS) : 4 years.
- Lab Development: Instrumental in development of dept. Process Instrumentation Dynamics & Control lab: 3 years
- Editor Department Newsletter (Catalysis): 3 years
- Deptt. TEQIP Purchase : 2 years
- NBA accreditation work: Incharge of the Chemical Dept.: 3 years
- Deptt. Students Counselor: 5 years
- Lab Incharge: has been deployed as lab incharge for PIDC lab, Computation lab, Mass transfer lab, CRE & Environmental lab, Waste Management research lab

Research / Practical Experience:

- Worked on multiple interdisciplinary projects involving advanced Modeling and Simulation techniques, with a strong focus on Energy Systems and Environmental Studies. These projects included system-level modeling, scenario analysis, and performance evaluation to assess energy efficiency, emissions, and environmental impacts.
- Carried out research on Modeling and Simulation of a high temperature Solid oxide fuel cell and on Nano Combustion Synthesis of Nickel oxide - Gadolinia doped Ceria-a precursor to SOFC Anode

7. **Area of
Specialization**

- Solid oxide fuel cells
- Nano-Synthesis
- Modeling & Simulation
- Alternate Energy Sources

8.	Subjects teaching at	<p>(a) Undergraduate level:</p> <ul style="list-style-type: none"> ➤ Chemical Process Simulation ➤ Chemical Reaction Engg. ➤ Petroleum Recovery Technology ➤ Alternative Energy Sources & Storage ➤ Energy Technology ➤ Chemical Process Instrumentation ➤ Heat Transfer ➤ Mass Transfer ➤ Energy Technology. ➤ Mechanical Operation ➤ Chemical Process Calculations ➤ Industrial Pollution Control ➤ Chemical Engg. Thermodynamics ➤ Air Pollution ➤ Environmental Toxicology <p>(b) Post Graduate Level</p> <ul style="list-style-type: none"> ➤ Advanced Mass Transfer ➤ Chemical Reaction Engineering ➤ Chemical Engineering Thermodynamics ➤ Process Modelling & Simulation
9.	Total Number of Research Publications (Annexure-A)	Published <ul style="list-style-type: none"> ➤ International Journals-10 ➤ International Conferences-07 ➤ National Conferences-
10.	No. of Students Guided	<ul style="list-style-type: none"> ➤ Ph. D : Nil ➤ Master's : 04 completed
11.	Academic Achievements and Awards	<ul style="list-style-type: none"> ➤ Merit Certificate of standing IInd in Mtech. Examinations securing Ist division with distinction. ➤ Convenor of AICTE sponsored Short term training Programme on “Mathematical methods & Computations in Engineering- MMCE-2019” July 1-6’2019, Dept. of Chem. Engg. SBSSTC, Ferozepur ➤ Co-ordinator of Faculty development programme on “Recent trends in Polymers composites & their Engg. Applications” in collaboration with CIPET Amritsar. ➤ AICTE Sponsored one day workshop on “Clean Energy Technologies” (2017). ➤ Member Board of Studies, Petroleum Engineering Department, Guru Gobind Singh College of Engineering and Technology, Guru Kashi University, Talwandi Sabo ➤ Member Board of Studies, Chemical Engineering MRSSTU, BATHINDA. ➤ Member Board of Studies, Chemical Engineering, SBSSTC, Ferozepur ➤ Presently the Chairman Board of Studies, Chemical Engineering, SBSSU, Ferozepur ➤ Session Chair in International Chemical Engg. Conference 2021 , organized by Dept. of Chemical Engg. & tech., Dr. B. R. Ambedkar NIT, Jalandhar. ➤ Published Newsletter for Dept. Of Chemical Engg. “Catalysis” for the Session July 2013-June 14 and July 2014-June 15. ➤ Delivered an expert talk on “Alternative fuels” in Faculty Development

- programme at AIET , Faridkot on 25th may 2015.
- Delivered an expert talk on “Modelling & Simulation of Engineering Systems” in STTP on Mathematical Methods & Computations in Engg.(MMCE-2019) on 4th July’2019.
12. **STC’s organized as faculty**
- Convenor of AICTE sponsored Short term training Programme on “Mathematical methods & Computations in Engineering- MMCE-2019” July1-6’2019, Dept. of Chem. Engg. SBSSTC, Ferozepur
 - Co-ordinator of Faculty development programme on “Recent trends in Polymers composites & their Engg. Applications” in collaboration with CIPETAmritsar.
 - AICTE Sponsored one day workshop on “Clean Energy Technologies” (2017)
13. **Short-Term courses attended**
- Short term course on “**Total Quality management & ISO-9000 Quality Systems**” from July1, 2002 to July12, 2002 organized by Department of Mechanical & Production Engg. S.B.S.C.E.T., Ferozepur
 - Short term course on “**Industry Institute Interaction: New Challenges**” from Dec.16 to 27, 2002 organized by Department of Mechanical & Production Engg. S.B.S.C.E.T., Ferozepur
 - Short term course on “**Inculcating & Developing Entrepreneurial Attitude (Need of 21st century)**” from July19th to July23, 2004 organized by Department of Mechanical & Production Engg. S.B.S.C.E.T., Ferozepur
 - Short term course on “**Autocad**” from 18th to 22nd April ’05 organized by National Institute of Technical Teacher’s training & Research at S.B.S.C.E.T., Ferozepur
 - Short term course on “**Matlab**” from 30th Jan to 3rd Feb. ’06 organized by National Institute of Technical Teacher’s training & Research at S.B.S.C.E.T., Ferozepur
 - Short term course on “**Advanced Autocad**” from 27th Feb. to 3rd Mar.’06 organized by National Institute of Technical Teacher’s training & Research at S.B.S.C.E.T., Ferozepur
 - Short term course on “**Bio-technology & Bio-chemical Engg.**” from 20th June. to 24th June.’11 organized by National Institute of Technical Teacher’s training & Research., Chandigarh
 - Short term course on “**Renewable Energy based technologies**” from 18th July to 22nd July ’11 organized by National Institute of Technical Teacher’s training & Research., Chandigarh
 - Short term course on “**Intelligent Computational techniques**” from 4th July to 15th July ’11 organized by National Institute of Technical Teacher’s training & Research., Chandigarh
 - TEQIP sponsored Short term course on “**Applied Soft Computing**” from 26th Nov. to 30th Nov’12 at SBSSTC Ferozepur.
 - TEQIP sponsored Short term course on “**Research Methodology tools & techniques**” from 26th Nov. to 30th Nov’12 at SBSSTC Ferozepur.
 - TEQIP sponsored Short term course on “**Engineering Materials**” from 17th Dec. to 21st Dec’12 at SBSSTC Ferozepur.
 - AICTE- TEQIP sponsored Short term course on “**Nature inspired computational intelligence**” from 6th May to 17th May’13 at SBSSTC

Ferozepur.

14. **FDPs organized in the institute**
 - ❖ Convenor of AICTE Sponsored STTP on “Mathematical Methods and Computations in Engineering (MMCE-2019)”.
 - ❖ Co-ordinator of Faculty development programme on “Recent trends in Polymers composites & their Engg. Applications” in collaboration with CIPETAmritsar.
 - ❖ AICTE Sponsored one day workshop on “Clean Energy Technologies” (2017).
15. **Membership** Life Member of ISTE

(AnnexureA)

A. Papers Published in International Referred Journals

1. **Pankaj Kalra**, Rajeev Garg, Ajay Kumar, A. P. Singh; “**Electrical characterization of NiO-CGO composites- SOFC anode precursor- prepared via combustion synthesis route**”, International Journal of Innovative research in Science, Engineering & Technology, ISSN 2319-8753 Volume 3, Issue 5, May2014.
2. **Pankaj Kalra**, Rajeev Garg, Neel Kanth Grover and Ajay Kumar; “**Structural Properties of Anode Composites Precursor of A Solid Oxide Fuel Cell Prepared Via Combustion Synthesis Route**”, Asian Journal of Engineering and applied Technology, ISSN 2249-068X, Pg 36-39(2012).
3. **Pankaj Kalra**, A. P. Singh, Ajay Kumar; “**Structural Properties of NiO-CGO Composites precursor prepared via Combustion Synthesis Route**” Asian Journal of Chemistry, ISSN 0970-7077, Vol. 21, No. 10 (2009),S157-161.
4. **Pankaj Kalra**, Rajeev Garg and Ajay Kumar;“Electrochemical Analysis of an Anode-Supported Axially Symmetrical one Dimensional Tubular Solid Oxide Fuel Cell” , Indian Journal of Science and Technology, Vol 10(19), DOI: 10.17485/ijst/2017/v10i19/113661, May 2017.
5. **Pankaj Kalra**, Rajeev Garg and Ajay Kumar;“DESIGN of a HIGH TEMPERATURE SOLID OXIDE FUEL CELL: A REVIEW” , International Journal for Research in Applied Science and Engineering Technology, ISSN: 2321-9653Volume 5, Issue IX, September 2017.
6. **Pankaj Kalra**, Rajeev Garg and Ajay Kumar;“Modeling of a one dimensional Anode supported high temperature tubular SOFC” in International Journal of ChemTech Research. CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555 Vol.10 No.6, pp 784-792, 2017.
7. **Pankaj Kalra**, Rajeev Garg and Ajay Kumar;“Kinetics analysis of reactions at the triple phase boundaries of an anode supported Tubular SOFC”, Asian Journal of Chemistry, 2018, Vol. 30 No. 3 pp 561-566.
8. **Pankaj Kalra**, Rajeev Garg and Ajay Kumar; “Parametric Sensitivity Analysis for a Natural Gas Fueled High Temperature Tubular Solid Oxide Fuel Cell” Heliyon, Cell Press, Elsevier.
9. Balpreet Kaur, **Pankaj Kalra**, Navneet Kaur, Prosopis Juliflora (Kikar) pods as adsorbent for removal of Cd(II) ions from aqueous streams” *Materials Today*

Proceedings, 2022,68, pp. 809-816

10. Balpreet Kaur, **Pankaj Kalra**, Navneet Kaur, Synthesis of Sugarcane Bagasse Fiber Reinforced PolymerComposite” AIP Conference Proceedings, 2025,2807,pp 050008 (1-8)

B. Book Chapters Published:

1. **Pankaj Kalra**, Rajeev Garg; Book Chapter titled "**Solid Oxide Fuel Cells- A Future Source of Power and Heat Generation**" in special edition of Material Science forum "**Engineering Applications of Nano-Science & Nano-Materials**", TransTech publications, ISSN print 0255-5476 Special edition of Material Science forum vol 757, pp 217-241 (2013).
2. Kamakshi Sharma, **Pankaj Kalra** and Balpreet Kaur Book Chapter titled "**Production of Bioplastics from Banana Peels**" in Book "**From Waste to Wealth**" Springer Nature Singapore (2024).

C. Papers published/presented in International/ National conferences

1. **Pankaj Kalra** and Dr. Rajeev Garg published a paper titled "**Modeling of a Solid oxide Fuel Cell with internal reforming**" in International conference on Frontiers of Material Research and Application (ISBN: 978-93-83842-92-6) held on Oct 30-31 2015 at SBSSTC,Ferozepur.
2. **Pankaj Kalra** and Dr. Rajeev Garg published a paper titled "**Advanced Materials for a Solid oxide Fuel Cell**" in International conference on Frontiers of Material Research and Application (ISBN: 978-93-83842-92-6) held on Oct 30-31 2015 at SBSSTC,Ferozepur.
3. **Pankaj Kalra** and Dr. Rajeev Garg published a paper titled "**Advanced synthesis techniques for various components of Solid oxide fuel cells- A Review**" in International conference on Frontiers of Material Research and Application held on Dec 2016 at SBSSTC,Ferozepur.
4. **Pankaj Kalra** and Dr. Rajeev Garg published a paper titled "**Advanced synthesis techniques for various components of Solid oxide fuel cells- A Review**" in International conference on Frontiers of Material Research and Application held on Dec 2016 at SBSSTC,Ferozepur.
5. **Pankaj Kalra** and Meenakshi Arora published a paper titled "Removal of COD and color of Distillery waste water using low cost adsorbents" in International conference on Frontiers of Material Research and Application held on Dec 2016 at SBSSTC, Ferozepur.
6. Ashima Arora and **Pankaj Kalra**, published a paper titled "Water Melon waste - a potential adsorbent for removal of pollutants from Water" in International conference on Frontiers of Material Research and Application held on Dec 2016 at SBSSTC, Ferozepur.

7. Pankaj Kalra, Anirudh P. Singh , Ajay Kumar : “Structural properties of NiO-CGO composites precursor prepared via combustion synthesis route” Advanced Materials & Radiation Physics, AMRP-2009, March 9-10, 2009, Dept. of Physics, SLIET Longowal
8. Pankaj Kalra, Anirudh P. Singh , Ajay Kumar : Combustion Synthesis and Characterization of Nano NiO-CGO composites – a precursor to SOFC Anode, Indo-Russian Workshop Nanotechnology and Laser Induced Plasma – 2009 (IRNANO-2009), Nov24-26th 2009, University of Delhi, Delhi, 2009
9. Balpreet Kaur, **Pankaj Kalra**, Navneet Kaur, Prosopis Juliflora (Kikar) pods as adsorbent for removal of Cd(II) ions from aqueous streams”, Indo-US International Conferences on Materials & Sustainable Engineering in Chemical and Allied Industry (MSECAI-2022), March 11-12, CU, Chandigarh.
10. Balpreet Kaur, **Pankaj Kalra**, Navneet Kaur, *Synthesis of Sugarcane Bagasse Fiber Reinforced Polymer Composite*”, Indo-US International Conferences on Materials & Sustainable Engineering in Chemical and Allied Industry (MSECAI-2022), March 11-12, CU, Chandigarh
11. **Pankaj Kalra** and Dr. Rajeev Garg published a paper titled “Modelling and Simulation of Multi-component Distillation Column,”, In International Conference on Advances in Modelling, Optimization ND Computing (AMOC-2011), Dec 5-7th 2011, Dept. of Mathematics , IIT Roorkee

D. Invited Talks/ Lectures

- ❖ Delivered an expert talk on “Alternative fuels” in Faculty Development programme at AIET , Faridkot on 25th may 2015.
- ❖ Delivered an expert talk on “Modelling & Simulation of Engineering Systems” in STTP on Mathematical Methods & Computations in Engg.(MMCE-2019) on 4th July’2019.