

# CURRICULUM VITAE

**Name:** *VIMAL KUMAR JAIN*

**Mailing Address:** Office – Director  
UM-DAE Centre for Excellence in Basic Sciences  
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Kharghar, Navi Mumbai-410 210.  
Tel.: 022-7960 9887

## **Personal**

Date of Birth: 1st August, 1956

Nationality: Indian

Present Position: Director, UM-DAE CEBS

## **Academic Qualifications**

**B.Sc.:** (1974) I Div. (Zoology, Botany and Chemistry) Agra University, Agra

**M.Sc.:** (1976) I Div. (Chemistry Organic) Agra University, Agra

**Ph.D.:** (1981) "Organic Derivatives of Arsenic and Antimony" Rajasthan University, Jaipur

## **Positions Held**

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|--------|---|--------------------------------|
| (i)    | Post-doctoral Research Associate, University of Guelph (Canada)<br>(Full time research under the supervision of Prof. H. C. Clark). | 1981 –1984                     |
| (ii)   | Scientific Officer - SD, Chemistry Division, B. A. R. C.  | 1984 – 1989                    |
| (iii)  | Scientific Officer - E, Chemistry Division, B. A. R. C.   | 1989 – 1994                    |
| (iv)   | Scientific Officer - F, Chemistry Division, B. A. R. C.   | 1994 – 1999                    |
| (v)    | Scientific Officer - G, NM & S Chemistry Division, B. A. R. C.  | 1999 – 2004                    |
| (vi)   | Scientific Officer - H, NM & S Chemistry Division, B. A. R. C.  | 2004 – 2007                    |
| (vii)  | Scientific Officer – H <sup>+</sup> , Chemistry Division, B. A. R. C.   | 2007– 2012                     |
| (viii) | Outstanding Scientist (OS), Chemistry Division, BARC  | 2012– 2015                     |
| (ix)   | Distinguished Scientist (DS), Chemistry Division, BARC  | 2015– 2016                     |
| (x)    | Head, Synthesis & Pure Materials Section, Chemistry Division, B.A.R.C.  | 2000 – 2016                    |
| (xi)   | Honorary Professor of Chemistry, Homi Bhabha National Institute (deemed University)   | 2006 - 2016                    |
| (xii)  | Officiated as Head NM & SC Division and Chemistry Division on several occasions   | (since 2005-2012)              |
| (xiii) | Head, Chemistry Division, Bhabha Atomic Research Centre, Mumbai   | (March 2013–<br>July 2016)     |
| (xiv)  | Raja Ramanna Fellow, Chemistry Group, BARC  | December 2016-<br>October-2017 |
| (xv)   | Director, UM-DAE CEBS, University of Mumbai, Kalina Campus, Mumbai  | October-2017-till<br>date      |

## **Awards and scientific recognition**

- (i) Junior Research Fellowship (Oct 1976-Jan 1980) of UGC; Senior Research Fellowship (Feb 1980-Feb 1981) and Post-Doctoral Fellowship (March 1981-Oct 1981) of CSIR, New Delhi
- (ii) "Bruker NMR award for the young scientists" (1989).
- (iii) "Homi Bhabha Science & Technology Award" (1996) (Department of Atomic Energy, Govt. of India).

- (iv) "International Scientific Exchange Award" of NSERC, Canada, (to visit University of Guelph, Ontario, Canada) (September 1993 to March 1994).
- (v) Recipient of Royal Society of Chemistry Journals Grants for International Authors to visit Oxford University, Oxford (UK) (April-May 1999).
- (vi) "Prof. S. S. Sandhu Award" (1999), Indian Chemical Society.
- (vii) Chemical Research Society of India, Medal (2001).
- (viii) Member of the Indian delegation sent by the Indian National Science Academy to USSR for the Indo-Soviet Symposium on Organometallic Chemistry (June, 1989).
- (ix) Prof. Priyadarajan Ray Memorial Award (2006) of the Indian Chemical Society.
- (x) Group Achievement Award (2009) of DAE for "Process Development of High Purity Strategic Materials" under my Group Leadership.
- (xi) Prof. W. U. Malik Memorial Award (2012) of Indian Council of Chemists.
- (xii) The Dharamsi Morarji Chemical Co. Visiting Fellowship (2013) of Institute of Chemical Technology, Mumbai
- (xiii) Group Achievement Award (2014) of DAE for "Development of Hydrogen Mitigation Technology for Nuclear Power Plants".
- (xiv) 'Vigyan Ratan Award' of Gyan Sagar Science Foundation (2017)

#### **Fellowship of Scientific bodies/ Academies**

- (i) Young Associate of the Indian Academy of Sciences, Bangalore-560 080 (1988-1991).
- (ii) IUPAC Affiliate member (1989 to 1991).
- (iii) Fellow of the National Academy of Sciences (*FNASc*), India (Elected in 1995).
- (iv) Fellow of IUPAC (2008-).
- (iv) Fellow of the Royal Society of Chemistry (*FRSC*) (U.K.) (Elected in 2009).

#### **Membership in the Editorial Boards**

- (i) Elected to the Board of Associate Editors of "J. Indian Chemical society" (1997- 1998).
- (ii) Member of the International Editorial Board of "Main Group Metal Chemistry" (1999-2010) Published by Freund Publishing House.
- (iii) Member of the Editorial Board of "Indian J. Chemistry, Section A" (2002- 2010).
- (iv) Member of the Editorial Board of "The Open Inorganic Chemistry Journal" Bentham Press (2007-2009)
- (v) Guest editor (with Prof. H.B. Singh), Phosphorous, Sulfur, Silicon and related elements; vol. 180, issue 2-3 (2005) (published by Taylor and Francis, USA).
- (vi) Member of the Editorial Board of the "Proceedings of the National Academy of Sciences, India", Section-A –Physical Sciences (2007- 2011).
- (vii) Guest Editor (with Dr. D. Das) J. Chemical Sciences (Vol. 122, issue 1 (2010) (Springer).
- (viii) Member, Editorial Board of 'International J. Chemistry' (2011- ) (Published by International Book House, Mumbai).

- (ix) Guest Editor (with Dr. R. K. Vatsa) of the web version of J. Materials Chemistry, RSC (UK) incorporating papers from ISMC-2014.
- (x) Guest Editor of a special issue on High Purity Materials of SMC Bulletin (Volume No 6, Issue No. 1, 2015).
- (xi) Guest Editor for the special issue on organometallics of "Proceedings of the National Academy of Sciences, India, Section-A" Volume 86, issue No 4 (2016).
- (xii) Editor-in-Chief (Inorganic chemistry Section) Chemistry Africa - A Journal of Tunisian Chemical Society (2018-), Published by Springer
- (xiii) Book Editor (V.K. Jain and Indira K. Priyadarsini) 'Organoselenium compounds in Biology and Medicine, RSC, UK (2018)
- (xiv) Guest Editor (with Dr. Indira K. Priyadarsini) J. Chemical Sciences (Vol.131, issue 9 (2019) (Springer).

### **Membership of Professional Societies**

- (i) Life Member: Indian Chemical Society (F/1689).
- (ii) Life Member: Nuclear Magnetic Resonance Society of India.
- (iii) Life Member: Catalysis Society of India (LM-9432).
- (iv) Life Member: Chemical Research Society of India (LM-121).
- (v) Life Member: Indian Science Congress Association, Calcutta. (Reg. No. L-8664; Card no. 8501).
- (vi) Life Member: Society for Materials Chemistry (LM-69).
- (vii) Joint Secretary of the Indian Chemical Society (Mumbai Branch) (July, 1996 - June, 2000).
- (viii) Vice President, Indian Chemical Society, (Mumbai Branch) (2003- 2004).
- (ix) IUPAC Inorganic Chemistry Division Committee: National Representative from India (2004-2006).
- (x) President, Indian Chemical Society (Mumbai Branch) (2005- 2006).
- (xi) Vice-president: Society for Materials Chemistry (April 2013- March 2016).
- (xii) President: Society for Materials Chemistry (Term-I, April 2016- March 2019) and (Term-II, April 2019- March 2022).

### **Workshop/ Symposium organization**

- (i) Co-Chairman for the 9<sup>th</sup> International Conference on the Chemistry of Selenium and Tellurium, IIT Bombay, (February 23-27, 2004).
- (ii) Secretary: One day workshop on "High Purity Materials for Advanced Electronics", 9 July 2004, BARC.
- (iii) Convener: Workshop on Organometallic Chemistry (April 18-20, 2005), Chemistry Group, BARC (Sponsored by DST).
- (iv) Secretary, 2<sup>nd</sup> International Symposium on Materials Chemistry (ISMC-2008) 2-6 December, 2008, BARC, Mumbai.
- (v) Chairman, Workshop organizing committee of DAE-BRNS "2<sup>nd</sup> National workshop on Materials Chemistry (Catalytic Materials)", 22-23 November 2013.

- (vi) Convener, DAE-BRNS “5<sup>th</sup> Interdisciplinary Symposium on Materials Chemistry (ISMC-2014)” 9-13 December 2014.
- (vii) Co-convener: Theme meeting on Chemistry in Nuclear Technology”, IGCAR, Kalpakkam (9-10 July, 2015).
- (viii) Chairman: National Workshop on Materials Chemistry: Optical Materials”, BARC (20-21 November 2015).
- (ix) Convener, DAE-BRNS “6<sup>th</sup> Interdisciplinary Symposium on Materials Chemistry (ISMC-2016)” 6-10 December 2016.
- (x) Served as Member of the advisory committees of several national and international symposia/conferences.
- (xi) Chairman, Summer School, on ‘Science of Materials’, sponsored by all the three science academies of India at UM-DAE-CEBS: 6<sup>th</sup> May to 14<sup>th</sup> June 2019.
- (xii) Chairman: 5<sup>th</sup> National workshop on Materials Chemistry: Nano and composite materials (NWMC-2019 (NCom – Mat)), Manipal University, Jaipur 8-9 November 2019.
- (xiii) Chairman for S. M. Chitre Memorial Symposium on ‘Frontiers in Astrophysics and Fluid Mechanics’, organized by UM-DAE-Centre for Excellence in Basic Sciences, University of Mumbai, Mumbai (6 - 8 May 2021).
- (xiv) Chairman for the National Conference on ‘Low Dimensional Materials: Growth, Optical and Electronic properties (LDMAT-2021)’ organized jointly by UM-DAE CEBS and Materials Research Society of India-Mumbai Chapter, University of Mumbai, Kalina Campus Mumbai (2-4 June 2021)
- (xv) Chairman for the ‘7<sup>th</sup> Theme Meeting on Ultrafast Science-2021 (UFS-2021)’, organized by UM-DAE Centre for Excellence in Basic Sciences, University of Mumbai, Kalina Campus, Santacruz (E), Mumbai (12-14 November 2021)

#### **Membership in funding/ selection/ promotion committees**

- (i) Member: Program Advisory Committee (PAC) Inorganic Chemistry, Department of Science & Technology (DST) New Delhi (2001-2007).
- (ii) Member: Program Advisory Committee (PAC) for International division of DST in the area of catalysis and chemical sciences (2005 - 2008).
- (iii) Member of the Assessment Committee for the promotion of staff members, IICT, Hyderabad (2000).
- (iv) Expert member: Faculty Selection committee, Shivaji University; Kolahpur, Rajasthan Central University, Kishangarh; Institute of Chemical technology, Mumbai
- (v) Member: Selection Committee for Chemistry Trainee of BARC (1986-1992, 1994, 1995).
- (vi) Member: Biology sub-committee for promotion of internal candidates (2001- 2011).
- (vii) Member of the panel experts for recruitment and assessment of scientists, NISCAIR (CSIR) (2010-2012).
- (viii) Co-Chairman of the standing selection Committee for promotion of departmental candidates (SO/D/ ETG (D-II) (Basic Sciences; Chemistry and biology committee) (2014-2016).
- (ix) Member of scerning committee for KSKRA fellowship of DAE (1999-2014) (1<sup>st</sup> Batch -25<sup>th</sup> Batch).
- (x) Member of the Committee for ‘Young Scientist Award of DAE’ (2013 and 2014).
- (xi) Expert for “Dr. S. S. Deshpande Memorial award” of Government Holkar College, Indore (2016).
- (xii) Chairman, Selection Committee of Atomic Energy Education Society (AEES) Central Level Awards, 2018.

- (xiii) Chairman, Selection Committee of Atomic Energy Education Society (AEES) Central Level Awards, 2020.

#### **Convener/ Membership in other committees**

- (i) Member: Indian National Chemistry Olympiad Examination Board (2001, 2002).
- (ii) Member: Fellowship Scrutiny Committee (Physical Sciences) of the National Academy of Science, India (2005, 2006) (2018, 2019, 2020, 2021).
- (iii) Member of the Training School (Chemistry) (2013-2016).
- (iv) Member Library committee for Chemical sciences (2013-2016).
- (v) Convener of Departmental Qualifying Examination for Technical Officer (TO) in Chemistry (2011- 2012).
- (vi) Convener of Regulatory Inspection Team-III (since 2008), Secretary of Local Safety Committee of Chemistry Group (since 2010) and Member of Modular Safety Committee (since 2010); Member - Crisis Management Committee for BARC (since September 2012).
- (vii) Chairman Unit Level Safety Committee-ML (ULSC-ML) (July 2014-2016).
- (viii) Member Secretary of the Governing Council of UM-DAE-CEBS (October 2017 – till date)
- (ix) Member, Governing Council of Atomic Energy Education Society (AEES) (September 2018- till date)
- (x) Member of the Jury team for assessment of poster and short oral communications in WSeS-8 Perugia, Italy, May 30-June 1, 2019 and 14<sup>th</sup> -ICCST, Sardinia, Italy, June 3-7, 2019.
- (xi) Member, Governing Council, NISER Bhubneshwar (March 2020- March 2023)
- (x) Council Member (2022) of the National Academy of Science, India

#### **Teaching/Universities related activities**

- (i) As a visiting faculty to the Bombay university for taking lectures on Organometallic Chemistry of M.Sc. (final year) students (8-10 lectures) (1995-2001).
- (ii) Teaching course C-703 (organometallic Chemistry, 30 lectures) to 7<sup>th</sup> Semesterr students 5-year integrated M. Sc. students of UM-DAE CEBS since 2018.
- (iii) Member, Board of Studies in Chemistry, Mumbai University (2001- 2005).
- (iv) Member, Syllabus Committee for Inorganic Chemistry (B.Sc. to M.Sc.) (2001- 2005), Mumbai University.
- (v) Convener, Syllabus Committee for Applied and Industrial Chemistry (M.Sc. course), Mumbai University.
- (vi) Member of the Expert Committee for Advanced Inorganic Chemistry Course, Indira Gandhi National Open University, Delhi (1997).
- (vii) Honorary Professor of Chemistry, Homi Bhabha National Institute (deemed University) (Dec. 2006-2012), Senior Professor of HBNI (2012-2016).
- (viii) Member Board of Studies in Chemical Sciences, Homi Bhabha National Institute, Mumbai (2007-2016).
- (ix) Member of the sub-committee constituted for preparing a five-year integrated course in chemistry for “DAE Centre of Excellence in Basic Sciences” Mumbai University (2006-2016).
- (x) Convenor of the Standing Academic Committee for Chemical Sciences, HBNI (2013-2016).

**Scientific Mentor for Doctoral Research**

Mumbai University PG 2303 of 1991 dated 5 <sup>th</sup> June 1991	Degree Awarded - Thesis submitted - Currently working-	Twenty two - -
Homi Bhabha National Institute	Degree awarded Thesis submitted Currently working	four - -
Rajasthan University	Degree Awarded	Two (in joint supervision with Prof. R. Bohra)

**Scientific Mentor for Master's Degree**

Mumbai University	Degree Awarded -	Seven
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**Publications: Please see the attached list**

## LIST OF PUBLICATIONS OF Dr. VIMAL K. JAIN

1. Synthesis and spectral studies of tris(1,3-diketonato)antimony(III).  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Synth. React. Inorg. Met.-Org. Chem.*, 9 (1979) 491-502.
2. Synthesis and spectral studies of (1,3-diketonato)triphenylantimony(V) complexes.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*J. Organometal. Chem.*, 184 (1980) 57-62.
3. Monothio- $\beta$ -diketonates of antimony(III).  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Inorg. Chim. Acta*, 44 (1980) L265-267.
4. Triphenylantimony(V) complexes with Schiff bases.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Aust. J. Chem.*, 33 (1980) 2749-2752.
5. Synthesis and spectral studies of triphenylantimony(V) oximates and benzamidoximate.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*J. Indian Chem. Soc.*, 57 (1980) 408-410.
6. Synthesis and spectroscopic studies of trialkyl bis(iminoxy)stibines.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Inorg. Chim. Acta*, 51 (1981) 191-194.
7. Structure and bonding in organic derivatives of antimony(V).  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Structure and Bonding*, 52 (1982) 147-196.
8. Triorganoantimony(V) complexes containing potentially dianionic tridentate Schiff bases.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Indian J. Chem.*, 22A (1983) 445-446.
9. Alkylxanthates of phenylantimony(III).  
R.K. Gupta, V.K. Jain, A.K. Rai and R.C. Mehrotra;  
*Indian J. Chem.*, 22A (1983) 708-709.
10. The stereochemistry of organotin(IV) oxinates in solution: Tin-119 nuclear magnetic resonance study of triorganotin(IV) oxinates.  
H.C. Clark, V.K. Jain, I.J. McMahon and R.C. Mehrotra;  
*J. Organomet. Chem.*, 243 (1983) 299-303.
11. Organoplatinum(IV) compounds.1. Preparation and characterization of dimethylplatinum(IV) compounds with chelating nitrogen donor ligands. Crystal and molecular structures of dimethyl[bis(1-pyrazolyl)methane]platinum diiodide and dimethyl[bis(3,5-dimethylpyrazolyl)methane] platinum diiodide.  
H.C. Clark, G. Ferguson, V.K. Jain and M. Parvez;  
*Organometallics*, 2 (1983) 806-810.
12. Cleavage of the carbon-silicon bonds in trimethylsilylacetylenes by trans-[(PR<sub>3</sub>)<sub>2</sub>PtX(R'OH)]PF<sub>6</sub> cations and formation of cationic alkoxy carbene complexes of platinum(II).  
H.C. Clark, V.K. Jain and G.S. Rao;  
*J. Organomet. Chem.*, 259 (1983) 275-282.
13. Platinum carbonyls and their use in homogeneous catalysis.  
H.C. Clark and V.K. Jain;  
*Coord. Chem. Rev.*, 55 (1984) 151-204.
14. Alkylxanthates of phenylarsenic(III).  
R.K. Gupta, A.K. Rai, R.C. Mehrotra and V.K. Jain;  
*Polyhedron*, 3 (1984) 721-728.

15. Cyclic O, O-alkylenedithiophosphates of phenylarsenic and antimony.  
R.K. Gupta, A.K. Rai, R.C. Mehrotra and V.K. Jain;  
*Inorg. Chim. Acta*, 88 (1984) 201-207.
16. Organoplatinum(IV) compounds.2. Preparation and characterization of trimethylplatinum(IV) compounds containing chelating nitrogen donor ligands. Crystal and molecular structure of iodotrimethyl[bis(3,5-dimethyl-1-pyrazolyl)methane]platinum(IV).  
H.C. Clark, G. Ferguson, V.K. Jain and M. Parvez;  
*J. Organometal. Chem.*, 270 (1984) 365-373.
17. Preparation and characterization of mercapto-bridged dinuclear platinum(II) complexes. Catalytic activity of [(PEt<sub>3</sub>)PtCl(μ-SEt)]<sub>2</sub> / SnCl<sub>2</sub> .2H<sub>2</sub>O system in hydrogenation and hydroformylation of styrene.  
H.C. Clark, V.K. Jain and G.S. Rao;  
*J. Organometal. Chem.*, 279 (1985) 181-191.
18. Preparation and characterization of heterobimetallic halogen-bridged palladium-platinum complexes. Crystal and molecular structure of [(PEt<sub>3</sub>)ClPd(μ-Cl)<sub>2</sub>PtCl(PEt<sub>3</sub>)].  
H.C. Clark, G. Ferguson, V.K. Jain and M. Parvez;  
*Inorg. Chem.*, 24 (1985) 1477-1482.
19. Tin-119, phosphorus-31, carbon-13 and proton nuclear magnetic resonance and Mossbauer studies of mono-, di- and tri-organotin(IV) dialkyldithiophosphates.  
H.C. Clark, V.K. Jain, R.C. Mehrotra, B.P. Singh, G. Srivastava and T. Birchall;  
*J. Organometal. Chem.*, 279 (1985) 385-394.
20. Phenylarsenic(III) and phenylantimony(III) bis(dialkyldithiophosphates) : Synthesis and multinuclear (<sup>1</sup>H, <sup>13</sup>C, <sup>31</sup>P) NMR and mass spectral studies. Crystal and molecular structures of C<sub>6</sub>H<sub>5</sub>M[S<sub>2</sub>P(OPr<sup>i</sup>)<sub>2</sub>]<sub>2</sub> [M = Sb(III) and As(III)].  
R.K. Gupta, A.K. Rai, R.C. Mehrotra, V.K. Jain, B. F. Hoskins and E.R.T. Tiekink;  
*Inorg. Chem.*, 24 (1985) 3280-3284.
21. <sup>15</sup>N, <sup>13</sup>C and <sup>119</sup>Sn NMR and other spectroscopic studies of 8-quinolinol, its O- and N-methyl derivatives and chelate di- and tri-organotin(IV) complexes.  
V.K. Jain, J. Mason, B.S. Saraswat and R.C. Mehrotra;  
*Polyhedron*, 4 (1985) 2089-2096.
22. Studies of chelation of 8-quinolinato ligand in triorganoantimony(V) complexes in solution by multinuclear (<sup>1</sup>H, <sup>15</sup>N, <sup>13</sup>C) NMR and electronic spectroscopy.  
V.K. Jain, J. Mason and R.C. Mehrotra;  
*J. Organometal. Chem.*, 309 (1986) 45-54.
23. Studies on some diorganotin(IV) complexes of bis- and tris-pyrazolyl and bis pyridyl methanes and pyridylpyrazolyles.  
R. Visalakshi, V.K. Jain, S.K. Kulshreshtha and G.S. Rao;  
*Inorg. Chim. Acta*, 118 (1986) 119-124.
24. Cleavage reactions of halogen-bridged heterobimetallic palladium-platinum complexes. Crystal and molecular structure of [(PBu<sup>n</sup>)<sub>3</sub>Cl<sub>2</sub>Pd(Bu<sup>t</sup>N=CHCH=NBu<sup>t</sup>)PtCl<sub>2</sub>(PBu<sup>n</sup>)<sub>3</sub>].  
H.C. Clark, G. Ferguson, V.K. Jain and M. Parvez;  
*Inorg. Chem.*, 25 (1986) 3808-3811.
25. Preparation and characterization of triphenylarsenic(V) dioximates and benzamidoximate.  
V.K. Jain, R. Bohra and R.C. Mehrotra;  
*Indian J. Chem.*, 25A (1986) 768-770.
26. Mixed chloro-mercapto-bridged dinuclear platinum(II) complexes and their catalytic activity in homogeneous hydrogenation.  
V.K. Jain and G.S. Rao;  
*Inorg. Chim. Acta*, 127 (1987) 161-167.



27. Preparation and characterization of some mixed ligand complexes of platinum(II).  
H.C. Clark, A.B. Goel, V.K. Jain, K.G. Tyers and C.S. Wong;  
*J. Organometal. Chem.*, 321 (1987) 123-134.
28. The organic chemistry of platinum(IV).  
V.K. Jain, G.S. Rao and L. Jain;  
*Adv. Organometal. Chem.*, 27 (1987) 113-168.
29. Preparation and characterization of mercapto-bridged homo- and hetero-binuclear palladium and platinum complexes.  
V.K. Jain  
*Inorg. Chim. Acta*, 133 (1987) 261-266.
30. Synthesis and spectral studies of diorganotin(IV) dialkyldithiophosphates.  
R. Visalakshi, V.K. Jain and G.S. Rao;  
*Spectrochim. Acta*, 43A (1987) 1235-1240.
31. Preparation and characterization of some organoplatinum(IV) complexes containing pyridylpyrazoles.  
V.K. Jain;  
*Indian J. Chem.*, 26 A (1987) 1019-1022.
32. Synthesis and IR and NMR spectral studies on some triorganotin(IV) compounds containing 2-pyridylcarbinols.  
R. Visalakshi, V.K. Jain and G. S. Rao;  
*Indian J. Chem.*, 27 A (1988) 427-429.
33. Synthesis and characterization of lanthanide tris-cyanoacetates.  
M.A. Vaidya, G.S. Deshpande, V.K. Jain and S.C. Jain;  
*Inorg. Chim. Acta*, 143 (1988) 123-130.
34. The Chemistry of platinum(I).  
V.K. Jain  
*Rev. Inorg. Chem.* 9 (1988) 299-344.
35. Synthesis, reactivity and redistribution reactions of homo- and hetero-binuclear palladium(II) and platinum(II) complexes.  
V.K. Jain  
*Proc. Indian Natn. Sci. Acad.*, 55A (1989) 273-292.  
(Lecture delivered at the 1st Indo-Soviet Symposium on organometallic chemistry, Rajasthan University, Jaipur).
36. Complexes of aluminum with aminopolycarboxylic acids: Al-27 NMR and potentiometric studies.  
R.K. Iyer, S.B. Karweer and V.K. Jain  
*Magnet. Reson. Chem.*, 27 (1989) 328-334.
37. Diorganotin(IV) dialkyldithiophosphates: Synthesis and spectral studies of diorgano(hydroxo) tin(IV)dialkyldithiophosphates.  
C.S. Parulekar, V.K. Jain and T.K. Das  
*Phosphorus, sulfur and silicon*, 46 (1989) 145-151.
38. Preparation and characterization of diorganotin(IV) compounds containing neutral bidentate nitrogen donor ligands.  
R. Visalakshi, V.K. Jain, S.K. Kulshreshtha and G.S. Rao  
*Indian J. Chem.*, 28A (1989) 51-54.
39. Synthesis and characterization of diorgano(chloro)tin(IV) 2-pyridylalkoxides.  
R. Visalakshi, V.K. Jain, S.K. Kulshreshtha and G.S. Rao  
*Indian J. Chem.*, 28A (1989) 767-770.
40. Molybdenum carbonyl complexes containing 2-thienylphosphines.  
V.K. Jain, V.S. Sagoria and M.S. Gill  
*Indian J. Chem.*, 28A (1989) 164-166.

41. Structural chemistry of organotin carboxylates II. The crystal structure of the dicarboxylato tetraorganodistannoxane  $[\{\text{Bu}_2\text{Sn}(\text{O}_2\text{CC}_5\text{H}_4\text{N})\}_2\text{O}]_2$ .  
C.S. Parulekar, V.K. Jain, T.K. Das, A.R. Gupta, B.F. Hoskins and E.R.T. Tiekink.  
*J. Organomet. Chem.*, 372 (1989) 193-199.
42. Dinuclear palladium(II) complexes with bridging mercapto group: X-ray crystal structure of a chloro/mercapto bridged dimer.  
V.K. Jain, R.P. Patel, K.V. Muralidharan and R. Bohra  
*Polyhedron*, 8 (1989) 2151-2155.
43. Dinuclear complexes of platinum(II).  
V.K. Jain  
*Current Science*, 59 (1990) 143-151.
44. Structural chemistry of organotin carboxylates. IV. Synthesis and spectroscopic properties of diorganotin(IV) complexes with o-anisic acid. The crystal and molecular structure of  $[\{\text{Bu}_2\text{Sn}(2\text{-MeOC}_6\text{H}_4\text{COO})\}_2\text{O}]_2$   
C.S. Parulekar, V.K. Jain, T.K. Das and E.R.T. Tiekink  
*J. Organomet. Chem.*, 387 (1990) 163-173.
45. Synthesis and spectral studies of trimethylplatinum(IV) dialkyldithiophosphates.  
R. Visalakshi and V.K. Jain  
*Trans. Met. Chem.*, 15 (1990) 278-282.
46. Methylplatinum(II) complexes containing 2-(diphenylphosphino)pyridine ( $\text{Ph}_2\text{Ppy}$ ). Crystal and molecular structure of  $[\text{PtMe}(\eta^2\text{-Ph}_2\text{Ppy})(\text{Ph}_2\text{Ppy})][\text{BPh}_4]$ .  
V.K. Jain, V.S. Jakkal and R. Bohra  
*J. Organomet. Chem.*, 389 (1990) 417-426.
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## Invited lectures in national /international conferences and various research institutes and Universities

1. Oxidative addition and reductive elimination of platinum complexes and their behaviour towards acetylenes  
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2. The chemistry of platinum(I).  
V.K. Jain  
National symposium on unusual valency states in coordination compounds; November 11-13 (1987), BARC, Bombay. I-12.
3. Synthesis, reactivity and redistribution reactions of homo- and hetero-binuclear palladium(II) and platinum(II) complexes.  
V.K. Jain  
First INDO-SOVIET symposium on Organometallic Chemistry, Rajasthan University, Jaipur, (March 7-11, 1988).
4. Some aspects of organometallic chemistry of platinum.  
V.K. Jain  
II-Soviet-Indian Symposium on organometallic chemistry, Irkutsk, Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences, Irkutsk, USSR (June 19-24, 1989).
5. Introduction to organometallic chemistry – Two lectures.  
UGC sponsored refresher course in Inorganic Chemistry, Institute of Science, Mumbai (1991).
6. Reactions of diorganotin oxides with protic ligands  
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7. Applications of NMR spectroscopy in Inorganic Chemistry  
RSIC, IIT Bombay (March 1993).
8. NMR spectral studies of binuclear palladium(II) and platinum(II) complexes.  
V.K. Jain  
Discussion meeting on recent advances in NMR, Indian Institute of Science, Bangalore, (March 15-17, 1993).
9. NMR concept and applications  
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10. Mono-, bi- and high-nuclearity organotin complexes.  
V.K. Jain  
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11. The chemistry of binuclear palladium(II) and platinum(II) complexes  
Department of Chemistry, IIT Bombay (8th November, 1995).
12. Binuclear palladium, platinum complexes and their use in homogeneous catalysis.  
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National Workshop on Catalysis, C.S.M.C.R.I., Bhavnagar, Dec., 20-22 (1995).
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International symposium on metalloorganic chemistry at the dawn of twenty first century, Rajasthan University, Jaipur (16-18 March, 1998).
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18. NMR spectroscopy (Two lectures)  
UGC refresher course in Chemistry, Ruia College, Mumbai (October 1998).
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Indo-Russian Seminar on Trends in Chemical Sciences, Department of Chemistry, Delhi University, Delhi (24-25, January 2000).
24. Molecules to materials. A case study of platinum group organochalcogenolates to metal chalcogenides  
Department of Chemistry, B.H.U. Varanasi (August 2000).
25. Molecules to materials: Platinum group metals organochalcogenolates to metal chalcogenides  
Institute of Inorganic Chemistry, University of Stuttgart (Germany) (September 2000).
26. An introduction to organometallic chemistry (Two lectures)  
Refresher course in Inorganic Chemistry, Pune University, Poona (24<sup>th</sup> November 2000).
27. Some organometallic chemistry of group 15 elements  
V.K. Jain (**Chemical Research Society of India - Medal Lecture**)  
Third National Symposium in Chemistry, Panjab University, Chandigarh (February 2-4, 2001).
28. Fluxional organometallic compounds  
One day Workshop on Inorganic Chemistry, Mumbai University, Mumbai (8<sup>th</sup> March, 2001).
29. Molecules to materials: Platinum group chalcogenolates to chalcogenides  
Rajasthan University, Jaipur (5<sup>th</sup> July 2001).
30. Organometallic chemistry at the interface of materials science  
Refresher course on Organometallic Chemistry, Mumbai University, Mumbai (October 2001).
31. Organometallic chemistry at the interface of materials science  
Centre for Compositional Characterization of Materials, Hyderabad (November 2001).
32. Chemistry of palladium and platinum tellurolates  
V.K. Jain and S. Dey  
The chemistry and applications of alkoxy, aryloxy and allied derivatives of elements, Rajasthan, University, Jaipur 10-13 January 2002.
33. Applications of NMR spectroscopy of main group elements to chemical problems  
Winter School in Chemistry, IIT Bombay (March 2002).
34. An introduction to CVD and the chemistry of main group organometallic precursors for inorganic materials  
Winter School in Chemistry, IIT Bombay (March 2002).

35. Applications of  $^{195}\text{Pt}$  NMR spectroscopy to chemical problems  
Graduate College on Magnetic Resonance, University of Stuttgart (Germany) (24<sup>th</sup> June 2002).
36. Organometallic chemistry at the interface of materials science. Precursors for metal chalcogenides  
Institute of Inorganic Chemistry, University of Stuttgart (Germany) (9<sup>th</sup> July 2002).
37. Organometallic chemistry at the interface of materials science: precursors for metal chalcogenides and related derivatives.  
V. K. Jain  
39<sup>th</sup> Convention of Chemists, Nagarjuna University, Nagarjunanagar, Andhra Pradesh, December 22-26, 2002.
38. Molecular precursors for metal pnictides and chalcogenides.  
V.K. Jain  
“The interaction of chemistry teaching with research and industry”, Rajasthan University, Jaipur, 15-17 January 2003.
39. Inorganic synthesis at the edge of materials science.  
V.K. Jain  
Recent advances in methods of synthesis in chemistry, K.J. Somaiya College, Mumbai, 7-8 February, 2003.
40. A retero-synthetic approach for inorganic materials.  
SAP & UGC sponsored workshop on “Recent advances in stereochemistry, organometallic chemistry and environmental studies”, The Institute of Science, Mumbai, (25-27 February 2003).
41. Molecular tectonics: An approach to design inorganic materials.  
Novel Materials and Structural Chemistry Division, BARC (28<sup>th</sup> March 2003).
42. Inorganic synthesis at the edge of material sciences: chemistry of palladium and platinum tellurolates.  
V.K. Jain  
“Modern Trends in Organometallic and Catalytic Chemistry” – Mark Vol’pin (1923-1996) Memorial International Symposium, A.N. Nesmeyanov Institute of Elementoorganic Compounds, Moscow, 18-23 May, 2003
43. Organometallic Compounds  
One day Workshop on Inorganic Chemistry, Vaze College, Mulund, Mumbai University (6<sup>th</sup> July, 2003).
44. Chemistry of N,N-Dimethylalkylchalcogenolate complexes of palladium(II) and platinum(II).  
V.K. Jain (Invited Lecture)  
9<sup>th</sup> International Conference on the Chemistry of Selenium and Tellurium, IIT Bombay, February 23-27, (2004).
45. Design and purification of group V organometallic precursors.  
V.K. Jain (Invited Lecture).  
High Purity Materials for Advanced Electronics, BARC, July 9, 2004.
46. NMR Spectroscopy  
Refresher course in spectroscopy, Ramanarain Ruia College, Matunga, Mumbai, (18<sup>th</sup> October, 2004).
47. N,N – Dimethylaminoalkylchalcogenolates : A versatile family of hybrid ligands.  
V.K. Jain (Invited Lecture)  
23<sup>rd</sup> Annual conference of the Indian Council of Chemists, K.C. College, Mumbai (October 29 – 31, 2004)
48. Synthesis and purification of some main group organometallic precursors for compound semiconductors.  
V.K. Jain (Invited Lecture)  
International symposium on ultrapure materials; Processing, characterization and applications, C-MET, Hyderabad, (November 22 –23, 2004)
49. Alchemists of 21<sup>st</sup> Century  
V.K. Jain (Invited Lecture)  
National seminar on “Challenges and perspectives in the chemical sciences in the 21<sup>st</sup> Century”, Wilson college, Mumbai, (December 6, 2004.)

50. Organometallic chemistry at the edge of materials science  
V.K. Jain (Invited Lecture)  
Workshop on organometallic chemistry, Bhabha Atomic Research Centre, Mumbai – 400085, (April 18-20, 2005).
51. Synthesis and characterization of single source molecular precursors for the preparation of metal chalcogenides  
V. K. Jain (Invited lecture)  
Modern Trends in Inorganic Chemistry-XI, IIT Delhi (December 8-10, 2005).
52. Introduction to organometallic chemistry  
Refresher course in chemistry for university teachers, Mumbai University, Mumbai (23<sup>rd</sup> December 2005).
53. Applications of organometallic compounds.  
Refresher course in chemistry for university teachers, Mumbai University, Mumbai (23<sup>rd</sup> December 2005).
54. Molecules to materials: Chemistry of molecular precursors for metal chalcogenide nano-particles  
V.K. Jain (Invited lecture)  
Recent Trends in Inorganic and Analytical Chemistry, University of Pune, September 1-2 (2006).
55. Alchemists of 21<sup>st</sup> Century.  
Ruia College, Matunga, Mumbai (25<sup>th</sup> November 2006).
56. Chemistry of molecular precursors for II-VI and III-VI materials  
V.K. Jain (Invited lecture)  
International Conference on Nano-materials for Electronics (ICNME-2006) , CMET, Pune, 27-29 November 2006.
57. A chemical expedition to materials science: Molecular precursors for metal chalcogenides.  
Department of Chemistry, Indian Institute of technology, Bombay (11 December 2006).
58. Synthesis and characterization of palladium and platinum chalcogenolates and their conversion into metal chalcogenides  
V.K. Jain (Invited lecture)  
Silver Jubilee Conference of Indian Council of Chemists, Birla College, Kalyan, 27-29 December 2006.
59. Chemistry of palladium and platinum organochalcogenolate complexes: Molecular precursors for metal chalcogenides  
V. K. Jain (invited lecture)  
National Symposium on “Recent Trends in Organometallic Compounds and their Industrial Applications”, Kalinga Institute of Industrial Technology (KIIT, University) Bhubaneswar, 26-28 February 2007.
60. A four-decade exploration of inorganic materials  
V. K. Jain  
TSC, BARC, Mumbai (6<sup>th</sup> March 2007).
61. A Chemical expedition to materials science: Molecular precursors for metal chalcogenides.  
School of Chemistry, University of Hyderabad, Hyderabad, 12 March 2007.
62. Organochalcogenolates of palladium(II) platinum(II): Versatile molecular precursors for metal chalcogenides.  
V.K. Jain  
Tenth International Conference on the Chemistry of Selenium and Tellurium, Lodz, Poland, (22-27 June, 2007).
63. Inorganic and organometallic compounds: Toxicology and pharmacology  
V.K. Jain  
Winter School in Bioinorganic Chemistry, Department of Chemistry, I.I.T. Bombay, 17-30 November, 2007.
64. Applications of inorganic and organometallic compounds (Part-I and Part-II)  
V.K. Jain  
Modern Methods in Chemistry, (UGC Refresher course in Chemistry) University of Mumbai 3-22 December, 2007.

65. Chemistry of molecular precursors for compound semiconductor nanoparticles  
V.K. Jain (Prof. Priyadarajan Ray Memorial award -2006)  
44<sup>th</sup> Annual Convention of Chemists, Mahatma Gandhi Institute of Applied Sciences, Jaipur,  
23-27 December 2007.
66. Metallo-organic precursors for semiconductor nanoparticles  
V.K. Jain  
V.G. Vaze College, Mulund (E) Mumbai, 12<sup>th</sup> January 2008.
67. Allylpalladium and orthometallated palladium/ platinum complexes with organochalcogen ligands: Synthesis, structures and their conversion into metal chalcogenides.  
V.K. Jain, S. Dey and N. Ghavale (Invited Lecture)  
International Conference on organometallic and coordination Chemistry, Nizhny Novgorod, Russia (September 2-8, 2008).
68. Molecular precursors for the synthesis of uniformly sized metal Chalcogenide nanoparticles  
V. K. Jain (*Invited lecture*)  
Chemistry of organoelement compounds: Results and prospects, A.N. Nesmeyanov Institute of Organoelement Compounds, Moscow, 28<sup>th</sup> September -2<sup>nd</sup> October 2009.
69. A chemical expedition to nano-materials  
V.K. Jain  
V.E.S. College of Art, Commerce and Science (affiliated to Mumbai University), Organized by Materials Research Society of India (MRSI), Mumbai Chapter, 22 November, 2008.
70. Organogallium and indium complexes with dithiolate and oxo ligands: Synthesis, structures and applications  
V. K. Jain, A. Wadawale, N. P. Kushwah and M. K. Pal (Invited Lecture).  
Symposium on Modern Trends in Inorganic Chemistry (MTIC-XIII), I. I. Sc., Bangalore, December 7-10, 2009.
71. Molecular precursors for the synthesis of uniformly sized metal Chalcogenide nanoparticles  
R. Sharma, G. Kedarnath, A. Wadawale and V. K. Jain (invited Lecture)  
National Conference on "High Tech Materials: Synthesis, characterization and applications", Disha Institute, Raipur, December 14-16, 2009.
72. An introduction to organometallic chemistry  
Referesh course in Chemistry for college teachers, Mumbai University, Kalina Campus (19 December 2009).
73. Applications of Organometallic compounds  
Referesh course in Chemistry for college teachers, Mumbai University, Kalina Campus (19 December 2009).
74. Organochalcogen compounds in materials science and biology  
V.K. Jain  
Scientific Development and our Responsibility", Gyan Sadhana Foundation, Karnatak Jain Bhawan, Bangalore, 29-31 January 2010.
75. Organochalcogen compounds in materials science and biology  
Department of Chemistry, Tokai University, Japan (22<sup>nd</sup> February, 2010)
76. Role of Electron microscopic techniques in semiconductor nanomaterials research  
G. Kedarnath and V.K. Jain  
International conference on advances in electron microscopy and related techniques, BARC, 8-10 March, 2010
77. Organochalcogen compounds in materials science and biology  
Department of Chemistry, Indian Institute of Technology, Bombay (12 March, 2010).
78. Organochalcogen compounds in biology  
V. K. Jain  
In course Symposium on Biological inorganic Chemistry, Indian Institute of Technology, Bombay, April 10, 2010.



79. Chemistry of pyridine-2-selenolate and –telluroate complexes of platinum group metals and main group elements.  
V.K. Jain, G. kedarnath, R. S. Chauhan, A. P. Wadawale and R. K. Sharma  
International Conference on “Topical problems of organometallic and coordination chemistry” Nizhny Novgorod (Russia), September 3-9, 2010.
80. Main group metal chalcogenolate complexes and their utility as molecular precursors for metal chalcogenides  
R. Sharma, R.S. Chauhan, G. Kedarnath, A. Wadawale and V. K. Jain  
National Symposium on Frontiers in Main Group and Organometallic Chemistry (NSFMOC), Indian Institute of Science, Bangalore, 20 November, 2010.
81. Metal chalcogenolate complexes for the preparation of metal chalcogenide nanomaterials.  
V. K. Jain  
3<sup>rd</sup> International Symposium on Materials Chemistry (ISMC-2010), BARC, Mumbai, 7-11 December 2010
82. Allyl and cyclometallated complexes of palladium, platinum and iridium: Synthesis, structures and properties.  
V.K. Jain  
National Conference on “Recent trends in organometallic compounds and industrial applications “(OMCA 2011), KIIT, Bhubneshwar, 26-28 February, 2011
83. Allyl and cyclometallated complexes of palladium, platinum and iridium: Synthesis, structures and properties.  
V.K. Jain  
National Symposium on “Organometallic Chemistry and organic synthesis: Highlights and New Perspectives”  
North Easter Hill University Shillong, 28-29 March 2011.
84. Allyl and cyclometalated complexes of palladium and platinum: Synthesis, structures and thermal behavior  
V.K. Jain  
3<sup>rd</sup> Asian Conference on Coordination Chemistry (ACCC-3) India Habitat Centre, New Delhi, October 17-20, 2011
85. Research and development on highpurity materials: challenges and opportunities  
V.K. Jain  
DAE –BRNS National Workshop on materials chemistry (functional materials0 (NWMC), BARC, December 7-8, 2011.
86. Organoselenium compounds: A new generation of radio-protectors and mimics of glutathione peroxidase  
V.K. Jain, A.S. Hodge, C.P. Prabhu, P.P. Phadnis, A. Wadawale, L. B. Kumbhare, B. Singh, A. Kumar and K.I. Priyadarsini  
2<sup>nd</sup> Global Scientists & Engineers conference on Scientific Development and our responsibility, Organized by Gyan Sagar Science Foundation, Mumbai (7-8 January 2012).
87. Research and development on high purity materials: Challenges and opportunities  
V.K. Jain  
National Conference ‘Towards Excellence in Science’, Institute of Science Golden Jubilee Trust Fund, Institute of Science, Mumbai (19-20 January 2012).
88. Oxidative addition reactions of organochalcogen ligands to low valent palladium and platinum complexes and isolation of several serendipitous products  
V. K. Jain  
National Conference on Frontiers in Chemical Sciences, Manipur University, Imphal (20-21 March 2012).
89. Applications of organometallic compounds  
(i) Catalysis  
(ii) Materials science  
(iii) Toxicology and pharmacological aspects  
Refereseach course in Chemistry organized by Mumbai University, 8<sup>th</sup> October 2012.
90. Chemistry of palladium and platinum chalcogenolate complexes with reference to their relevance as catalysts in C-C and C-E bond formation  
V. K. Jain (Prof. W.U. Malik Memorial Award, Indian Council of Chemists)  
31<sup>st</sup> Annual conference of ICC, Saurashtra University, Rajkot (26-28 December 2012).

91. Molecular precursors for the synthesis of uniformly sized metal chalcogenolate nanoparticles  
V. K. Jain (Plenary lecture)  
National Conference on Chemistry of Chalcogens, Defence Institute of Advanced Technology, Pune (14-15 January, 2013).
92. Peeping in metal catalysed reactions  
Chemistry Division, BARC, Mumbai (9 May 2013)
93. Peeping in metal catalysed reactions  
School of Chemical Sciences, Devi Ahilya Vishwa Vidyalaya, Indore (12 July 2013)
94. A quest for energy from greenhouse emissions: Carbon dioxide utilization for C-H bond formation  
Chemistry Colloquiumk, BARC, 21 August 2013.
95. Synthesis, structures and utility of organo-gallium and –indium complexes with oxo and thio ligands  
V. K. Jain, A. Wadawale, N.P. Kushwah and M. K. Pal (invited lecture)  
International Conference “Organometallic and coordination chemistry: Fundamentals and applied aspects”, Nizhny Novgorod (Russia) September 1-7, 2013.
96. Applications of inorganic and organometallic compounds
  - (i) Catalysis-I
  - (ii) Catalysis-II
  - (iii) Materials science
  - (iv) Toxicology and pharmacological aspects
 (Endowment lectures of ICT Mumbai: Dharamsi Morarji Chemical Co. Visiting Fellowship -2013)
97. Chemistry of metal chalcogenide nano-materials  
V.K. Jain (Invited lecture)  
3<sup>rd</sup> International conference on “Scientific Development and our responsibility” organized by Gyan sagar Science Foundation, Convention Centre, New Delhi, 8-9 February 2014.
98. Cyclometalation of seleno and telluro ether ligands  
S. Kolay, A. Wadawale, D. Das and V.K. Jain  
New Directions in Chemical synthesis-II (Inorganic synthesis: A felicitation to Prof. Herbert W. Roesky, IIT Bombay, 10-11 December 2014.
99. Kaleidoscope of Chemistry Division, BARC  
V.K. Jain (evening lecture)  
5<sup>th</sup> Interdisciplinary Symposium on Materials Chemistry (ISMC-2014), 9-13 December 2014
100. Cyclometalation of seleno and telluro ether ligands  
S. Kolay, A. Wadawale, D. Das and V.K. Jain  
National Conference on Chemistry of Chalcogens and Related Topics (NC3-2015); Defence Institute of Advanced Technology (DIAT) Pune, 12-13 January 2015.
101. Applications of inorganic and organometallic compounds
  - (i) Catalysis
  - (ii) Materials science
 Refresher course in Chemistry, Lucknow University, Lucknow, 16 February 2015.
102. Organoselenium compound: A family of new generation of radio-protectors  
V.K. Jain, P.P. Phadnis, Amit Kunwar and K.I. Priyadarsini  
Rashtriya vaigyanik sangosthi, organized by Hindi Vigyan Sahitya Parishad at Shri Mata Vaishno Devi University, Jammu (25-27 February, 2015).
103. Research and development on high purity materials: Challenges and opportunities  
V.K. Jain  
Theme meeting on ‘Chemistry in Nuclear Technology’ IGCAR, Kalpakkam, 9-10 July 2015.
104. Copper, silver and gold pyridyl and pyrimidyl chalcogenolates and their utility as molecular precursors for metal chalcogenides  
V. K. Jain, G. K. Kole, G. Kedarnath and A. Wadawale  
International conference on multifunctional materials for future applications (ICMFA-2015), IIT, BHU, Varanasi, 27-29 October 2015.

105. Organoselenium compounds: A family of radioprotectors  
V.K. Jain, P.P. Phadnis, A. Kunwar and K.I. Priyadarsini  
National conference on 'New horizons of Science in the Development of Agriculture, Energy and Health',  
Central Institute of Medicinal and Aromatic Plants, Lucknow, 2-6 November 2015.
106. Cyclometalation of heavier chalcogen ligands  
V.K. Jain, S. Kolay, A. Wadawale and D. Das  
13<sup>th</sup> International Conference on the Chemistry of Selenium and Tellurium Gifu, Japan (23-27 May 2016).
107. Research and development on high purity materials: Challenges and opportunities  
V.K. Jain  
Tata Institute of Fundamental Research, Mumbai, 17<sup>th</sup> June 2016.
108. Molecular tectons of two-dimensional (2-D) inorganic chalcogenides  
Society for Materials Chemistry, Chemistry Division, BARC, Mumbai; 29 July 2016.
109. An overview of R & D activities of Chemistry Division, BARC  
Water & Steam Chemistry Division, Kalpakkam, 8 July 2016.
110. An overview of R & D activities of Chemistry Division, BARC  
NCCCM, Hyderabad, 15 July 2016.
111. Research & Development on high purity materials: Challenges and opportunities  
Jaypee University of Engineering & Technology (JUET), Guna (MP) 10 November 2016.
112. Research & Development on high purity materials: Challenges and opportunities  
5<sup>th</sup> Conference on 'Scientific Development and our Responsibility', Gyan Sagan Science Foundation,  
Muzaffarnagar (U.P.), 14-15 October 2017.
113. Applications of Inorganic and organometallic compounds in materials science  
Refresher course for University teachers, organized by Department of Chemistry, University of Mumbai,  
Kalina Campus, Mumbai, 7 November 2017.
114. Palladium and platinum complexes of chalcogen ligands as catalysts in C-C and C-E bond formation  
Conference on Advances in Catalysis for Energy and Environment (CACEE),  
TIFR, Mumbai, January 10-12 (2018).
115. Retrosynthesis of 2-D metal chalcogenides  
V. K. Jain  
UM-DAE-CEBS, Mumbai, 20 March 2018.
116. Internally functionalized multifaceted organochalcogen compounds  
V.K. Jain (Inaugural Lecture)  
National Conference on Chalcogenide Compounds (NC3-2019), Defense Institute of Advanced Technology  
(DIAT) Pune, 14-15 March 2019.
117. PVs, LEDs and Organometallic Chemistry  
V. K. Jain (invited lecture)  
Summer School on 'Science of materials', sponsored by all the three science academies of India; UM-DAE-  
CEBS, 6<sup>th</sup> May-14<sup>th</sup> June 2019.
118. Internally functionalized multifaceted organochalcogen compounds  
V.K. Jain (Plenary lecture)  
Workshop on the Network selenium, sulfur and redox catalysis (WSeS-8), University of Perugia, Italy (30  
May-1 June 2019).
119. Pyridyl and pyrimidyl chalcogenolates of coinage metals and their utility as molecular precursors for the  
preparation of metal chalcogenides  
V.K. Jain (invited lecture)  
14<sup>th</sup> International conference on the chemistry of selenium and tellurium (ICCST-14), University of Cagliari,  
Italy (3-7 June, 2019).
120. Multifaceted N-heteroaryl selenium compounds and their coinage metal complexes  
V.K. Jain (invited lecture)  
8<sup>th</sup> International Selenium conference; Thapar Institute, Patiala, (Punjab), November 20-23 (2019).

121. Life in the times of novel coronavirus (SARs-CoV-2/ Covid-19)  
V.K. Jain  
UM-DAE CEBS colloquium, 22 September 2020
122. **मौलिक विज्ञान प्रकर्ष केंद्र: विज्ञान शिक्षा में एक नया प्रयोग**  
V. K. Jain, Chief Guest on the occasion of Rajbhasha Vaigynik Varta  
Bhabha Atomic Research Centre, Trombay, Mumbai, 11 January 2021
123. What chemists can do for fighting SARS-CoV-2  
V.K. Jain, (Inaugural lecture)  
International Conference on 'Emerging novel trends in science for human welfare' (15-16 February 2021),  
Jnan Vikas Mandal's Degree College Aroli, navi Mumbai, 15 February 2021
124. SARS-CoV-2: BioChem perspective  
V. K. Jain (On the occasion of National Science Day)  
NASI (Mumbai Chapter) on National Science Day, theme 'Future of Science, Technology and innovation-  
Impact on Education, skills and work, 28<sup>th</sup> February 2021
125. Selenium- A wonder element for all walks of life  
V. K. Jain (Inaugural Lecture)  
'National Conference on Chemistry of Chalcogenides (NC<sup>3</sup>)', Defence Institute of Advanced Technology,  
Pune (24-25 March 2021)
126. Precursor chemistry of group-14 chalcogenide materials  
V.K. Jain (invited lecture)  
International Online Conference on Nano Materials (ICN 2021), Mahatma Gandhi University, Kottayam,  
Kerala (9-11 April 2021).
127. Advances in coordination chemistry  
Vimal K. Jain (invited lecture)  
World Chemistry Conference 2021, Wilson College, 3-4 May 2021.
128. UM-DAE CEBS: A journey from BRNS project to grant-in-aid institute of DAE  
Vimal K. Jain  
One day Scientific meet in the memory of Prof. S.M. Chitre, CEBS, Mumbai, 11 January 2022

## Chairperson for the Scientific Sessions in Conferences/Symposia/Seminars

1. 29<sup>th</sup> Annual Convention of Chemists-1992, APS University, Rewa.
2. Indo-Russian seminar on Trends in Chemical Sciences, Delhi University (2000).
3. International Conference on Emerging Trends in Chemical Sciences, Mumbai University (23-25 January 2007).
4. X- International Conference on the Chemistry of Selenium and Tellurium, Lodz, Poland, (22-27 June, 2007).
5. 12<sup>th</sup> Modern Trends in Inorganic Chemistry, IIT Madras, 6-8 December 2007.
6. International conference on "Hydrogen & hydrogen storage: Methods and Materials", I.I.Sc., Bangalore, January 3-6, 2009.
7. National symposium on BARC technologies for development of Rural India, BARC, Mumbai (25-26 November 2009).
8. 13<sup>th</sup> Modern Trends in Inorganic Chemistry, I.I.Sc., Bagalore, 7-10 December 2009.
9. National conference on High Tech Materials: Synthesis, characterization and applications, Dish Institute of Management and Technology (DIMAT) Raipur, (14-16 December, 2009)
10. Scientific Development and our Responsibility, organized by Gyan Sagar Science foundation, Bangalore, 29-31 January, 2010.
11. International Conference on supramolecular chemistry and nanomaterials (ICSN-2011), Mumbai University, Mumbai, 14-16 February 2011.
12. National conference on "Recent trends in organometallic compounds and their industrial applications" OMCA-211; KIIT University, Bhubneswar, 26-28 February 2011.
13. National Symposium on "Organometallic Chemistry and organic synthesis: Highlights and New Perspectives" North Easter Hill University Shillong, 28-29 March 2011.
14. 3<sup>rd</sup> Asian Conference on Coordination Chemistry (ACCC-3) India Habitat Centre, New Delhi, October 17-20, 2011 organized by IIT Kanpur and IIT Delhi
15. Workshop on instrumental methods in chemistry organized by the Maharashtra Academy of Sciences-BARC and Ruia College, December 1-2, 2011.
16. 2<sup>nd</sup> Global Scientists & Engineers conference on Scientific Development and our responsibility, Organized by Gyan Sagar Science Foundation, Mumbai (7-8 January 2012).
17. 24<sup>th</sup> Research Scholars' Meet (RSM-2012), jointly organized by SIES college and Indian Chemical Society (Mumbai Branch), SIES College Mumbai (17-18 February 2012).
18. National Conference on Frontiers in Chemical Sciences, Manipur University, Imphal (20-21 March 2012).
19. 2<sup>nd</sup> National Symposium on "BARC Technologies for Development of Rural India (BTDR-13)", Deen Dayal Upadhyay Gorakhpur University, 12-13 March, 2013.
20. 3<sup>rd</sup> International conference on "Scientific Development and our responsibility" organized by Gyan sagar Science Foundation, Convention Centre, New Delhi, 8-9 February 2014.
21. National Symposium on "Science and Technologies in Ancient Indian Scriptures" Organized by BARCOA, Mumbai, 21-22 April, 2014.
22. National Conference on Ancient Science and Technology: Retrospect and Aspirations (ASTRA-2015); Fergusson College, Pune, 10-11 January 2015.
23. National Conference on Chemistry of Chalcogens and Related Topics (NC3-2015); Defence Institute of Advanced Technology (DIAT) Pune, 12-13 January 2015.









24. UGC-SAP sponsored National conference on 'Advanced and Innovations in Chemical Sciences; Department of Chemistry, University of Mumbai, 12-13 February, 2105.
25. Rashtriya vaigyanik sangosthi, organized by Hindi Vigyan Sahitya Parishad at Shri Mata Vaishno Devi University, Jammu (25-27 February, 2015).
26. National conference on 'Current trends in Analytical Chemistry ' (CTAC-2015)BARC, Mumbai, 26-29 May 2015.
27. Interantioal conference on multifunctional materials for future applications (ICMFA-2015), IIT, BHU, Varanasi, 27-29 October 2015.
28. 13<sup>th</sup> Trombay Symposium on Radiation & Photochemistry (TSRP-2016) and 6<sup>th</sup> Asia Pacific Symposium on Radiation Chemistry (APSRC-216), BARC Mumbai, 5-9 January 2016.
29. DAE-BRNS 1<sup>st</sup> Workshop on Thermal Analysis organized by ITAS, BARC, Mumbai, 2021 Decmber 2016.
30. Recent Advances in Chemical Biology, one day meeting of Society of Biological Chemistry (Mumbai Chapter, organized by MU-DAE-CEBS, University of Mumbai, 19 August 2017.
31. UGC-SAP sponsored National Conference on 'Recent developments in chemical sciences', Departemnt of Chemistry, University of Mumbai (8-9 March 2018).
32. National Symposium on 'Materials in Healthcare', School of Sciences, GITAM (Deemed to be University) Hyderabad, 6-8 September 2018.
33. 7<sup>th</sup> Interdisciplinary Symposium on Materials Chemistry (ISMC), BARC, Mumbai, 4-8 December, 2018.
34. National Conference on Chalcogenide Compounds (NC3-2019), Defense Institute of Advanced Technology (DIAT) Pune, 14-15 march 2019.
35. DAE-BRNS Life Science Symposium on 'Molecular and Cellular Responses to Stresses and Cancer Therapeutics' BARC Mumbai, 28-30 March 2019.
36. 14<sup>th</sup> International conference on the Chemistry of selenium and tellurium (ICCST-14); Santa Margherita di Pula (CA), Sardinia, Italy, 3-7 June 2019.
37. Member of the Jury team for assessment of poster and short oral communications in WSeS-8 Perugia, Italy (30 May-1 June 2019) and 14<sup>th</sup> -ICCST, Sardinia, Italy (3-7 June 2019).
38. Chaired two Scientific Sessions in the 'Symposium on Advances at the Interface of Biology and Chemistry'', a symposium of The Society for Biological Chemists, organized by the biosciences Group, BARC during 31 October -3<sup>rd</sup> November 2019.
39. Chaired a Scientific Session in 8<sup>th</sup> International Selenium conference; Thapar Institute, Patiala, (Punjab) November 20-23 (2019).
40. Chaired a Scientific Session in 32<sup>nd</sup> ISMAS Symposium on mass Spectrometry, Bhabha Atomic Research Centre, Mumbai, 27-30 November 2019
41. Chaired a scientific session in 57<sup>th</sup> Annual Convention of Chemists 2020 and International Conference on Recent Trends in Chemical Sciences (RTCS-2020), 26-29 December 2020.
42. Chaired a Scientific session in 'National Conference on Chemistry of Chalcogenides (NC<sup>3</sup>)', Defence Institute of Advanced Technology, Pune (24-25 March 2021)
43. Chaired a scientific session in 'International Online Conference on Nano Materials (ICN 2021)', Mahatma Gandhi University, Kottayam, Kerala (9-11 April 2021).
44. Chaired a scientific session in 58<sup>th</sup> Annual Convention of Chemists 2021, organized by M. S. University Baroda, 21-24 December 2021.



## Ph.D. Students of Dr. V. K. Jain

S. No.	Student	Brief details
1.		Dr. (Mrs.) V. B. Mokal Science Governor of Preston Park Primary school, 5, Preston Waye, Harrow, Middlesex, HA3 0QG, London (UK) Mobile: 0044- 7794115720; E mail: <a href="mailto:vbmokal200@yahoo.com">vbmokal200@yahoo.com</a> Ph.D. Thesis: 'Synthesis, reactivity and characterization of organotin(IV) compounds' (Mumbai University 1993)
2.		Dr. Satyajeet Chaudhury Head Actinides Processing Section, Fuel Chemistry Division, BARC, Mumbai e-mail: <a href="mailto:saty@barc.gov.in">saty@barc.gov.in</a> Ph.D. Thesis: 'Synthesis and characterization of organoplatinum compounds' (Mumbai University 1993)
3.		Dr. (Mrs.) Anshu Singhal Scientific Officer-G, Chemistry Division, BARC, Mumbai Ph.D. Thesis: 'The chemistry of some bi- and tri-nuclear organopalladium and platinum complexes'(Mumbai University 1996)
4.		Prof. S. S. Garje Department of Chemistry, University of Mumbai, Vidyanagari, Santacruz (East), Mumbai -400 098 Tel: 2654 33 68 ; Mob: +91-9969382865 Email: <a href="mailto:ssgarje@chem.mu.ac.in">ssgarje@chem.mu.ac.in</a> Ph.D. Thesis: 'The organometallic chemistry of some arsenic and antimony compounds' (Mumbai University 1996)
5.		Dr. Sanjay Narayan Manager (R&D) R&D Centre, United Phosphorous Limited , Plot No. C-12, Road No. 16, Wagle Industrial Estate, Thane (West)- 400604 E-mail: <a href="mailto:sanjanand@yahoo.com">sanjanand@yahoo.com</a> ; Tel: 022-25827828 Ph.D. Thesis: 'Organometallic chemistry of some platinum group metals with chalcogenide ligands' (Mumbai University 1999)
6.		Dr. (Mrs.) Dimple Dutta Scientific Officer-G, Chemistry Division, BARC, Mumbai Ph.D. Thesis: 'Synthesis, characterization and reactivity of some gallium and indium compounds' (Mumbai University 2001)
7.		Dr. Kallola Kumar Swain Scientific Officer-F, Analytical Chemistry Division, BARC, Mumbai e-mail: <a href="mailto:kallola@barc.gov.in">kallola@barc.gov.in</a> Ph.D. Thesis: 'A study on pre-concentration of trace impurities in environmental and high purity inorganic materials' (Mumbai University 2003)
8.		Dr. (Mrs.) Anjali Gupta, Ph.D. Thesis: 'Synthetic studies and structural aspects of some novel organometallic compounds of arsenic and antimony incorporating nitrogen and, oxygen and / or sulfur atoms' (joint supervision with Prof. R. Bohra) (Rajasthan University, Jaipur 2002)
9.		Dr. (Miss.) Vinita Sharma Ph.D. Thesis: 'Synthetic studies and spectroscopic aspects of some novel organometallic compounds of tin (and related metals) incorporating nitrogen, oxygen and /or sulfur atoms' (joint supervision with Prof. R. Bohra) (Rajasthan University, Jaipur 2002)





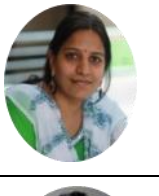


10.		(late) Dr. Mahalaxmi Hariharan Ph.D. Thesis: A study of some novel compounds of Group 15 elements : Their synthesis and characterization (Mumbai University 2003)
11.		Dr. Sandip Dey Scientific Officer-G, Chemistry Division, BARC, Mumbai Mobile No: 9969062084; Email: dsandip@barc.gov.in Ph.D. Thesis: 'Synthesis and characterization of organochalcogenolates of platinum group metals' (Mumbai University 2003)
12.		Dr. Prasad Padmakar Phadnis Scientific Officer-E, Chemistry Division, BARC, Mumbai Mobile No: 9702533404; Email: phadnisp@barc.gov.in Ph.D. Thesis: 'Synthesis, purification and ligand chemistry of some organometallics of group V elements' (Mumbai University 2004)
13.		Dr. Nitin C. Bagkar Director, Nanoin Korea Co. Ltd., Korea Email: <a href="mailto:inceo@nanoin.us">inceo@nanoin.us</a> ; <a href="mailto:nanoine@gmail.com">nanoine@gmail.com</a> Ph.D. Thesis: 'Studies on novel properties of Prussian blue analogues and their composites with conducting polymers' (Mumbai University 2005)
14.		Dr. Shamik A. Ghoshal Senior Manager; Nanotechnology Division; Platform Speciality Chemical, 89/1 Yeswantpur Industrial Estate, Bangalore 560022 Mobile: 7760996042; E-mail: shamik123@rediffmail.com Ph.D. Thesis: 'Synthesis and characterization of gallium and indium complexes derived from some nitrogen and chalcogen ligands' (Mumbai University 2007)
15.		Dr. G. Kedarnath Scientific Officer-F, Chemistry Division, BARC, Mumbai Mobile No: 9820718998; Email: kedar@barc.gov.in Ph.D. Thesis: 'Design, synthesis and characterization of molecular precursors of II-VI materials' (Mumbai University 2008)
16.		Dr. Ninad D. Ghavale Scientist SABIC Research and Technology Pvt. Ltd., Bangalore Mobile: 9987 27 9939; Email: <a href="mailto:ninad.ghavale@sabic.com">ninad.ghavale@sabic.com</a> Ph.D. Thesis: 'Synthesis, reactivity and characterization of bi- and hi-nuclearity complexes of palladium and platinum with chalcogen ligands' (Mumbai University 2010)
17.		Dr. Liladhar B. Kumbhare Scientific Officer-F, Chemistry Division, BARC, Mumbai Mobile No: 9224348457; Email: liladhar@barc.gov.in Ph.D. Thesis: 'Design, synthesis and characterization of platinum group chalcogenolates' (Mumbai University 2011)
18.		Dr. Sanyasi Naidu Boddu Scientist B, Institute of Nano Science and Technology, Habitat Center, Phase 10, Sector 64, Mohali, Punjab-160062 Mobile No: 9646466706; Email: naidu245@gmail.com Ph.D. Thesis: 'Synthesis and characterization of lanthanide ions doped nanoparticles' (Dr. V. Sudarsan as co-guide) (Homi Bhabha National Institute 2012)



19.		<p>Dr. Rohit Singh Chauhan Assistant Professor Department of Chemistry, K. J. Somaiya College of Science and Commerce Vidyavihar, Mumbai-400077 Mobile: 09320870781; E-mail: <a href="mailto:rcevergreen@gmail.com">rcevergreen@gmail.com</a> Ph.D. Thesis: 'Platinum group metal chalcogenolates: Synthesis, spectroscopy and structures' (Homi Bhabha National Institute, 2012)</p>
20.		<p>Dr. Ananda Shamrao Hodage Research Analyst Crest Pvt. Ltd., Upper Ground Floor, Tower - 8, Magarpatta City, Hadapsar, Pune 411013 <b>Mobile:</b> 09930836094; <b>Email:</b> <a href="mailto:sanjayanand2007@gmail.com">sanjayanand2007@gmail.com</a> Ph.D. Thesis: 'Design, synthesis and characterization of organoselenium compounds' (Mumbai University 2013).</p>
21.		<p>Dr. Rakesh Kumar Sharma (Died on 4<sup>th</sup> June 2021) Research Scientist (Manager), Reliance Technology Group, Reliance Industries Limited CU-116, First Floor TC30B , Reliance Corporate Park, Reliance Industries Limited, Thane- Belapur Road, Ghansoli, Navi Mumbai -400701 Mobile: 7710074264; E-mail: <a href="mailto:Rakesh.Kuma.Sharma@ril.com">Rakesh.Kuma.Sharma@ril.com</a> Ph.D. Thesis: 'Synthesis and characterization of single source molecular precursors for binary and ternary materials' (Mumbai University 2013).</p>
22.		<p>Dr. Parashiva Prabhu C. Scientist Reliance Industries Limited, Petrochemical R&amp;D CU-150, TC 30B, FF, Reliance Corp Park, Thane Belapur Road, Ghansoli; Navi Mumbai 400 701 Mobile: 7710022827; E-mail: <a href="mailto:paraprabhu@gmail.com">paraprabhu@gmail.com</a> Ph.D. Thesis: 'Synthesis and physico-chemical studies of organoselenium compounds with reference to their biological activities' (Jointly with Dr. K.Indira Priyadarsini) (Mumbai University 2014).</p>
23.		<p>Dr.(Mrs.) Nisha Kushwah Scientific Officer-C, Chemistry Division, BARC, Mumbai Mobile No: 9869250618; Email: <a href="mailto:knisha@barc.gov.in">knisha@barc.gov.in</a> Ph.D. Thesis: 'Design, synthesis and characterization of organogallium and indium compounds with group V and VI ligands' (Mumbai University 2015).</p>
24.		<p>Dr. Dilip Kumar Paluru Mobile: 8080059298; Email: <a href="mailto:dilipkumar_paluru@yahoo.co.in">dilipkumar_paluru@yahoo.co.in</a> Ph.D. Thesis: 'Synthesis and characterization of chalcogenolate complexes of palladium and platinum and their catalytic applications in C-C bond formation' (Mumbai University 2015).</p>
25.		<p>Dr. K.V. Vivekananda Mobile No: 8080059416 ; Email: <a href="mailto:kvivek18@gmail.com">kvivek18@gmail.com</a> Ph.D. Thesis: 'Synthesis and characterization of multinuclear/ supra-molecular complexes of platinum group metals with chalcogen ligands' (Co-guide Dr. Sandip Dey) (Homi Bhabha National Institute, 2015)</p>
26.		<p>Siddhartha Kolay Scientific Officer-E, Chemistry Division, BARC, Mumbai Mobile No: 9869703859 ; Email: <a href="mailto:siddharthakolay@yahoo.co.in">siddharthakolay@yahoo.co.in</a> Ph.D. Thesis: Synthesis, characterization and thermal studies of cyclometalated palladium and platinum complexes derived from chalcogen ligands (Co-guide: Dr. D. Das) (Homi Bhabha National Institute, 2015)</p>

27.		<b>Mrs. Alpa Y. Shah</b> Germanium and tin compounds: Synthesis, characterization and their use as single source molecular precursor (University of Mumbai, April 2018) e-mail: salpa1708@gmail.com
28.		<b>Ramya Gopakumar Nair</b> Investigation of catalytic and optical properties of multi-component transition metal and rare earth-based oxides and chalcogenides for energy and environmental applications (Co-guide: Dr. S. R. Bharadwaj) (University of Mumbai, September 2018) Email: ramyagnair7@gmail.com; mobile No:8291237823

### M. Sc. Students of Dr. V. K. Jain

1.		Mr. C. Thinaharan M.Sc. Dissertation: Synthesis and characterization of thermoelectric materials (Mumbai University 2006)
2.		Mr. Kamal P. Chaudhari Scientific Officer-C, Chemistry Division, BARC, Mumbai Mobile No: 9869205236; Email: kamalc@barc.gov.in M.Sc. Dissertation: Synthesis and characterization of some organo -arsenic and -antimony compounds (Mumbai University 2008)
3.		Mr. Suresh M. Chopade Scientific Officer-C, Chemistry Division, BARC, Mumbai Mobile No: 9869035140; Email: csuresh@barc.gov.in M.Sc. Dissertation: Ultrapurification of gallium and indium and their magnesium alloys (Mumbai University 2008)
4.		Mrs. Nisha P. Kushwah Scientific Officer-C, Chemistry Division, BARC, Mumbai Mobile No: 9869250618; Email: knisha@barc.gov.in M.Sc. Dissertation: Synthesis and characterization of some organo -gallium and -indium complexes (Mumbai University 2008)
5.		Mrs. Alpa Y. Shah Scientific Officer-C, Chemistry Division, BARC, Mumbai Mobile No:9920658805; Email: salpa@barc.gov.in M.Sc. Dissertation: Synthesis and characterization of some organometal -germanium compounds (Mumbai University 2009)
6.		Mr. Amey P. Wadawale Mobile No: 9969427788; Email: ameypw@barc.gov.in M.Sc. Dissertation: Structural studies on chalcogenolate complexes of palladium and platinum (Mumbai University 2012)
7.		Mr. Manojkumar Pal Mobile No: 9820317950; Email: mpal@barc.gov.in M.Sc. Dissertation: Organogallium and indium complexes containing group V and VI donor ligands (Mumbai University 2012)

## Research Projects

### I. B.A.R.C. Projects

- (i) Project coordinator for the “MASCOT Project (Rs.5.00 Crore) on ultra-purification of materials, Government of India (1996-2002). Project No. : CR&D44 (completed)
- (ii) Apex project coordinator “Strategic Materials Development” (Rs.27.23 Crore) Project No. X-R&D-31-(N) MP No.4.10, DAE Project Identification code (PIC) No.10-R&D-BARC-4.10-0200 X –Plan, Government of India. (April 2002 – 2007) (Completed).
- (iii) Sub-Project coordinator “Synthetic inorganic chemistry and its application”, Apex project – “Energy Conversion”. Project identification code: 11-R&D-BAR-5.03-0107 (Rs. 275 Lakhs) (April 2008- March 2012) (completed).
- (iv) Apex project coordinator “Chemistry of materials for energy, environment and health” (Rs.58.80 Crore) XII –Plan, Government of India. (April 2012 – 2017) (completed)

### II. External Projects

#### International:

- (i) “Preparation of high purity organometallic compounds for MOCVD” (Exchange visits only) (1999-2001) (completed).  
Indo-Russian program under bilateral agreement (Project no. A.2.22) through DST, New Delhi.  
Investigators from Russia: Prof. I.K. Igumenov, Institute of Inorganic Chemistry, Novosibirsk, Russia  
From India: Dr.V.K. Jain, BARC.
- (ii) “Ultra-pure organometallics of platinum group metals” (Exchange visits only) (2000-2003) (completed).  
Indo-German program under bilateral agreement (Project no. IND-99/060)  
Investigators from Germany: Prof. W.Kaim, University of Stuttgart, Germany.  
From India: Dr.V.K. Jain, BARC.
- (iii) “Carboranes and their complexes as precursors for undoped and doped boroncarbide” (Exchange visits only) (March, 2008- February, 2011). ) (completed).  
Indo-Russian program under bilateral agreement (Project no. INT/ILTP/B-5.22) through DST, New Delhi.  
Investigators from Russia: Prof. V.I. Bregadze, A.N. Nesmeyanov Institute of Organo-element compounds (INEOS) RAS, Moscow, Russia  
From India: Dr.V.K. Jain, BARC.
- (iv) “Redox reactions of water soluble selenides, selenoamino acids and sugar conjugates” (Exchange visits only) (2008- 2010) (Completed).  
Indo-Japan program under bilateral JSPS agreement (Project no. DST/INT/JAP/P-45/08) through DST, New Delhi.  
Investigators from Japan: Dr. M. Iwaoka, Department of Chemistry, Tokai University, Japan  
From India: PI – Dr. (Mrs.) K.I. Priyadarsini; Co-PI - Dr.V.K. Jain, BARC.
- (v) “Dichalcogenolate complexes of carboranes and metallocarboranes as structure determining ligands in coordination and supramolecular chemistry”  
INT/RFBR/p-71 (2010-2012). (Completed).  
DST (India)- Russian Foundation for Basic Research (RFBR, Russia)  
From India: Dr. V.K. Jain and Prof. Vladimir I. Brigadze (INEOS) Moscow.
- (vi) Synthesis and reactivity of new dichalcogenocarborane metal complexes  
INT/RFBR/P-122 (2012- 2015) (completed)  
DST (India)- Russian Foundation for Basic Research (RFBR, Russia)  
From India: Dr. V.K. Jain and Prof. Vladimir I. Brigadze (INEOS) Moscow.

**National :**

- (vii) “Organometallic chemistry of platinum group metal complexes with heterophospholes” (Rs.5,81,177/-) BRNS, DAE (Project no. 37/9/97 R&D-II) (1997-2000) ([completed](#)).  
Principal investigator : Prof. R.K Bansal (Rajasthan University, Jaipur)  
Principal collaborator : Dr. V.K. Jain (BARC)
- (viii) “Synthesis and purification of some organometallics of groups II, IV, V and VI elements (Zn, Cd, Ge, Sn, Pb, Sb, Bi, Te)” (Rs. 18,49,630/) (July 1999 - June 2002) ([completed](#))  
funded by BRNS, DAE (Project no. 98/37/33/BRNS)  
Principal investigators : Dr. R. Bohra (Rajasthan University, Jaipur) and Dr. V.K. Jain (BARC)
- (ix) “Investigation on the synthesis, structure and ion exchange properties of new hosts for nuclear waste disposal”  
Funded by BRNS, DAE (BRNS project No. : 2005/37/36/BRNS, dated 7<sup>th</sup> November 2005) (Rs 1421650) ([completed](#))  
Principal Investigators: Prof. Srinivasan Natarajan, I.I.Sc. Bangalore and Dr. V.K. Jain (BARC)
- (x) “Synthesis, redox reactions, anti-oxidant enzyme activity and in vitro radioprotection of some aliphatic water soluble organo selenium compounds”  
(2008- 2012).  
Prospective Research Funding through BRNS  
Project No. 2007/38/05-BRNS/2932 ([completed](#))  
PI – Dr. (Mrs.) K.I. Priyadarsini; Co-PI - Dr.V.K. Jain, BARC.