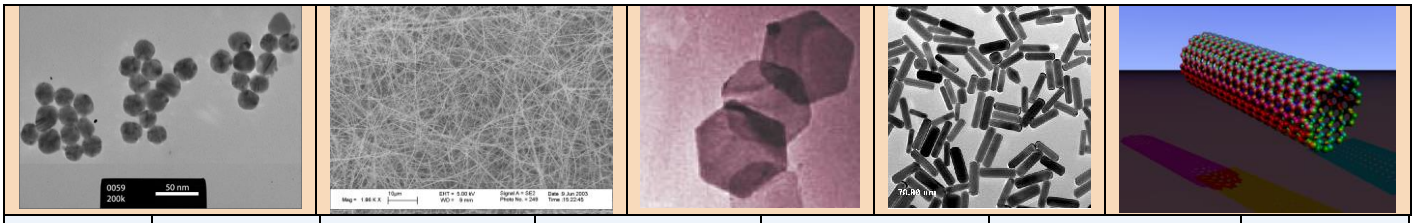

Dr. Shivram S. Garje

(Profile updated on 01-06-2019)

Contact

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Profile

Educational Qualifications

B.Sc. (Chemistry)	1991	1st Div.	University of Mumbai, Mumbai, India
M.Sc. (Inorganic Chemistry)	1993	1st Div.	University of Mumbai, Mumbai, India
Ph.D. (Chemistry)	1997	-	University of Mumbai, Mumbai, India
Title of the thesis:	"The Organometallic Chemistry of Some Arsenic and Antimony Compounds"		
Place of Research work:	Chemistry Division, Bhabha Atomic Research Centre, Trombay, Mumbai-400085 with Dr. V. K. Jain		
Postdoc	2005-06		University of Manchester, UK with Prof. Paul O'Brien

Positions held

June 1993 - Dec.1993	"**Trainee Quality Control Chemist**" USV Ltd, Mumbai, India
Jan.1994 - Jan.1998	"**Research Fellow**" Chemistry Division, Bhabha Atomic Research Centre, Trombay, Mumbai, India
Jan.1998 - Jan.1999	"**Lecturer in Inorganic Chemistry**", Department of Chemistry, University of Pune, Ganeshkhind, Pune- 411 007, India
Aug.1999- Jan. 2000	"**Lecturer in Inorganic Chemistry**", Department of Chemistry, Institute of Science, Fort, Mumbai - 400 032, India
Jan. 2000- May 2004	"**Lecturer in Inorganic Chemistry**", Department of Chemistry, University of Mumbai, Santacruz (E), Mumbai- 400 098, India
May 2004- Jan. 2006	"**Lecturer (Sr. Scale) in Inorganic Chemistry**", Department of Chemistry, University of Mumbai, Santacruz (E), Mumbai- 400 098, India
Jan. 2006- May 2009	"**Assistant Professor (Sr. Scale) in Inorganic Chemistry**", Department of Chemistry,University of Mumbai, Santacruz (E), Mumbai- 400 098, India
May 2009 - March 2014	"**Associate Professor in Inorganic Chemistry**", Department of Chemistry, University of Mumbai, Santacruz (E), Mumbai- 400 098, India
March 2014 to date	"**Professor**", Department of Chemistry, University of Mumbai, Santacruz (E), Mumbai- 400 098, India

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Awards and Honors

1994-1995	"**Junior Research Fellowship**", Department of Atomic Energy, Government of India
1994	"**Prof. B. C. Halder Young Scientist Award**", Indian Chemical Society for the best paper presentation in Inorganic Chemistry Section
1996-1997	"**Senior Research Fellowship**", Department of Atomic Energy, Government of India
1996	"**Prof. A. K. Dey Young Scientist Award**", Indian Chemical Society for the best paper presentation in Inorganic Chemistry Section
2002	"**Young Scientist Research Award**", Department of Atomic Energy, Government of India
2004	"**BOYSCAST Fellowship**", Department of Science and Technology, Government of India
2008	"**Performance Based Incentive Award**", University of Mumbai

Membership of Professional Societies

1. Life member of Indian Chemical Society (F/4598)
2. Life member of Indian Association of Chemistry Teachers (LM 16)
3. Life member of Material Research Society of India (LM B686)
4. Member of Royal Society of Chemistry, UK (382632)
5. Life member of Indian Society for Materials Chemistry (LM-42)
6. Life member of Chemical Research Society of India (LM 1192)
7. Member of American Chemical Society, USA
7. Executive Council Member, Indian Chemical Society, Mumbai Chapter (2007 to 2015)
8. Joint Secretary, Indian Chemical Society, Mumbai Chapter (2015 to 2019)
9. Vice-President, Indian Chemical Society, Mumbai Chapter (2019 to date)
10. Executive Council Member, Materials Research Society of India, Mumbai Chapter (2012 to date)

Research activities

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Summary of research work

Total citations: 546, **h-index:** 14, **i10-index:** 17 **(Source-** Google Scholar**)**

Research papers in refereed journals	Published	56
	Accepted	01
	Under revision	00
Research papers presented in conferences		75
Research projects	Completed	02
	Ongoing	01
Research students	M. Sc. (by research)(completed)	05
	Ph. D. (completed)	08
	(thesis submitted)	00
	(working)	06
	Postdoc. (completed)	01
	(UGC-Dr. D. S. Kothari Postdoc.	

	Fellow)	
	(working)	01
	(UGC-Dr. D. S. Kothari Postdoc. Fellow)	
Patent/s	Filed	01

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Research Projects

1. Title	:	Synthesis, Spectroscopic and Structural Studies of Semicarbazone and Thiosemicarbazone Complexes of Main Group Metals
Funding Agency	:	University of Mumbai
Amount	:	Rs. 10,000
Period	:	2000-2001
2. Title	:	Design and Development of Group 15 Molecular Precursors for MOCVD
Funding Agency	:	BRNS, Department of Atomic Energy, Govt. of India
Amount	:	Rs. 7,50,000
Period	:	2002-2005
3. Title	:	Development of metal chalcogenide nanomaterials and their carbon based nanocomposites using single source molecular precursors for supercapacitor applications
Funding Agency	:	SERB, DST, Govt. of India
Amount	:	Rs. 32, 01, 285
Period	:	2017-2020

Supervision of research students

Group members

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Ph. D.

Sr. No.	Name	Status	Present position
1.	Dr. Sujit Dattaram Disale	Degree awarded (2010)	Industry
2.	Dr. Anil Mahadeo Palve	Degree awarded (2010)	Academics
3.	Dr. Yogesh Suresh Niwate	Degree awarded (2010)	Industry
4.	Dr. Ajay Vittalrao Gole	Degree awarded (2012)	Academics
5.	Dr. Jasmine Bijaya Biswal	Degree awarded (2013)	Research
6.	Dr. Narayan Vijay Sawant	Degree awarded (2013)	Industry
7.	Dr. Amol S. Pawar	Degree awarded (2016)	Academics
8.	Ms. Jagruti S. Suroshe	Degree awarded (2018)	--
9.	Mr. Aleem Ansari	Working	--
10.	Ms. Rashmi A. Badhe	Working	--
11.	Ms. Mamta Jain	Working	--

12.	Ms. Indumati Yadav	Working
13.	Mr. Dinesh Yadav	Working
14.	Mr. Omkar Padave	Working

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Postdoc

Sr. No.	Name	Status	Present position
1.	Dr. Kanchan Samant	UGC-Dr. D. S. Kothari Postdoctoral Fellow (2012-2014, Completed)	--
2.	Dr. Deepak Babar	UGC-Dr. D. S. Kothari Postdoctoral Fellow (2017 to date)	--

M. Sc. (By research)

Sr. No.	Name	Status	Present position
1.	Ms. Mamta Pal	Degree awarded (2003)	Academics
2.	Ms. Kishori S. Dalvi	Degree awarded (2004)	Industry
3	Mr. Narayan Vijay Sawant	Degree awarded (2005)	Industry
4.	Ms. Jasmine Bijaya Biswal	Degree awarded (2007)	Research
5.	Mr. Balasaheb P. Bade	Degree awarded (2007)	Industry

Reviewer of the journals

Name of the Journal	Publisher
Applied Organometallic Chemistry	John Wiley and Sons
ACS Applied Materials & Interfaces	American Chemical Society
Journal of Crystal Growth	Elsevier
Synth. React. Inorg. Met.-Org. Nano-Met. Chem.	Taylor and Francis
Structural Chemistry	Springer
Applied Physics A	Springer
J. Korean Chem. Soc.	Korean Chem. Society
Materials Letters	Elsevier
Crystal Research and Technology	Wiley-VCH
J. Mol. Struct.	Elsevier
Green and Sustainable Chemistry (GSC)	Scientific Research Publishing
J. Alloys and Compds.	Elsevier
Chem. Lett.	The Chemical Society of Japan

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Research highlights

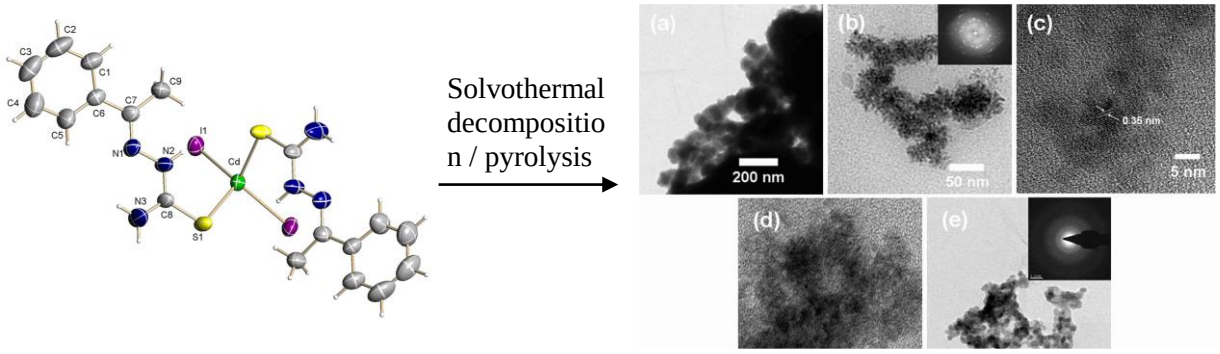
Our research is focused on development of simple, eco-friendly single source molecular precursors (SSPs) which can lead to phase pure and uniform morphology nanoparticles and thin films. The SSPs contain desired elements which are required in the final material in a single molecule. They have some distinct advantages over conventional multiple source precursors. These include their low toxicity, no or limited pre-reactions, control on stoichiometry, control on volatility using suitable ligands, etc.

Synthesis of single-source molecular precursors

In view of the enormous applications of the nanomaterials, it is important to develop the precursors which can lead to phase pure nanoparticles having uniform morphology. Conventionally, metal chalcogenide nanoparticles and thin films are prepared from non-ecofriendly starting materials under drastic conditions. For example, for the preparation of metal chalcogenide nanoparticles like metal sulfides, H_2S, a toxic gas is used as a source of sulfur. Therefore, there is a need to replace such toxic chemicals in the preparation of these materials. We have developed a green approach for the synthesis of metal chalcogenide nanoparticles and thin films. In this, instead of using multiple source precursors which contain one source for metal and another one for chalcogen, SSPs are employed. For example, for the preparation of CdS nanoparticles and thin films, cadmium thiosemicarabazone complexes have been used as SSPs. Thus, it is greener and safer approach. Moreover, it is possible to control the phase and morphology of the resulting material.

Preparation of metal chalcogenide nanoparticles

Along with SSPs, we have also demonstrated use of milder and safer preparation methods for the synthesis of nanomaterials and thin films. The nanoparticles are prepared by pyrolysis and solvothermal decomposition methods, whereas thin films are deposited by aerosol assisted chemical vapour deposition technique. These preparation methods use much milder conditions and they are safer.



Cd(acetophenone thiosemicarbazone)$_2$ complex | **CdS nanoparticles**

Related publications:

A. M. Palve, P. V. Joshi, V. Puranik and **S. S. Garje**, Polyhedron, **61** (2013) 195-201; A. M. Palve and **S. S. Garje**, J. Cryst. Growth, **326** (1) (2011) 157-162; S. D. Disale and **S. S. Garje**, J. Organomet. Chem., **696** (2011) 3328-3336; A. M. Palve and **S. S. Garje**, Bull. Mater. Sci., **34** (4) (2011) 667-671; J. B. Biswal and **S. S. Garje**, J. Solid State Chem., **204** (2013) 348-355.

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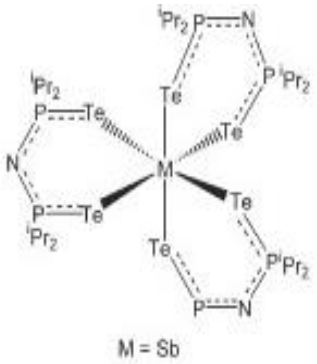
Preparation of metal chalcogenide thin films

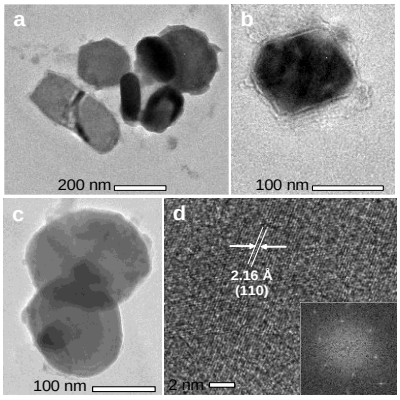
Thin films are prepared from SSPs using aerosol-assisted chemical vapour deposition (AACVD) technique.

Thin films containing Sb_2Te_3 nanoplates



$[Sb\{(TePPr^{i}_{2}N)_2\}_3]$

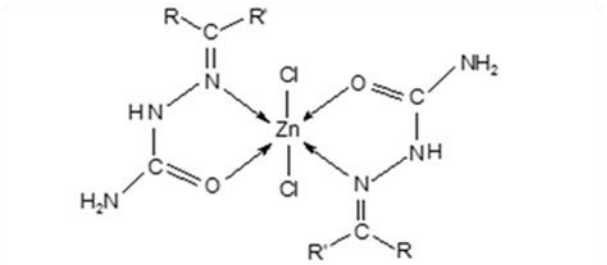
AACVD



Sb_2Te_3 nanoplates

Morphology tuned ZnO thin films

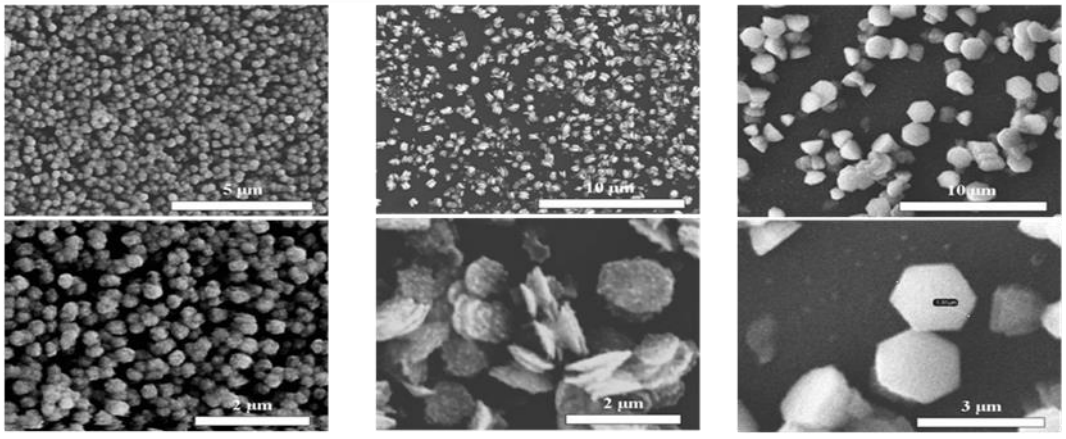
The morphology of the thin films can be tuned by controlling deposition parameters like temperature, precursor concentration, solvent, carrier gas flow rate, etc. in AACVD technique.



Where, R' = H, R = CH=CH-C_6H_6 **(1)**, R' = CH_3 ,R = C_6H_4F **(2)**, R' = H, R = C_6H_6 **(3)** and R' = H, R = C_6H_4Cl **(4)**

AACVD

ZnO thin films



350°C *400°C* *450°C*

SEM images of ZnO thin films obtained using AACVD of $ZnCl_2(cinnamsczH)_2$

Related publications:

S. S. Garje, D. J. Eisler, J. S. Ritch, M. Afzaal, P. O'Brien, and T. Chivers, J. Am. Chem. Soc., **128** (10) (2006) 3120-3121; **S. S. Garje**, J. S. Ritch, D. J. Eisler, M. Afzaal, P. O'Brien and T. Chivers, J. Mat. Chem., **16** (2006) 966-969; **S. S. Garje**, M. C. Copsey, M. Afzaal, P. O'Brien, and T. Chivers, J. Mat. Chem., **16** (2006) 4542-4547; B. P. Bade, **S. S. Garje**, Y. S. Niwate, M. Afzaal and P. O'Brien, Chem. Vap. Dep., **14** (2008) 292-295; J. B. Biswal, N. V. Sawant and **S. S. Garje**, Thin Solid Films, **518** (12) (2010) 3164-3168

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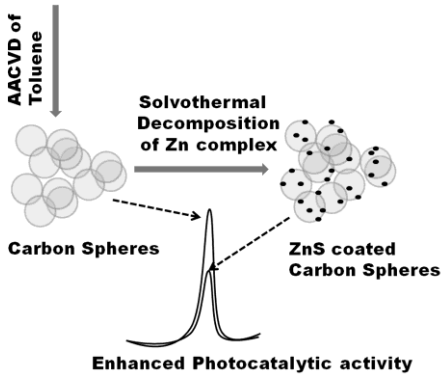
Preparation of carbon based metal chalcogenide nanocomposites and their applications.

Metal chalcogenide coatings on carbon based materials like carbon sphere enhance photocatalytic activity due to enhanced surface area and synergistic effect.

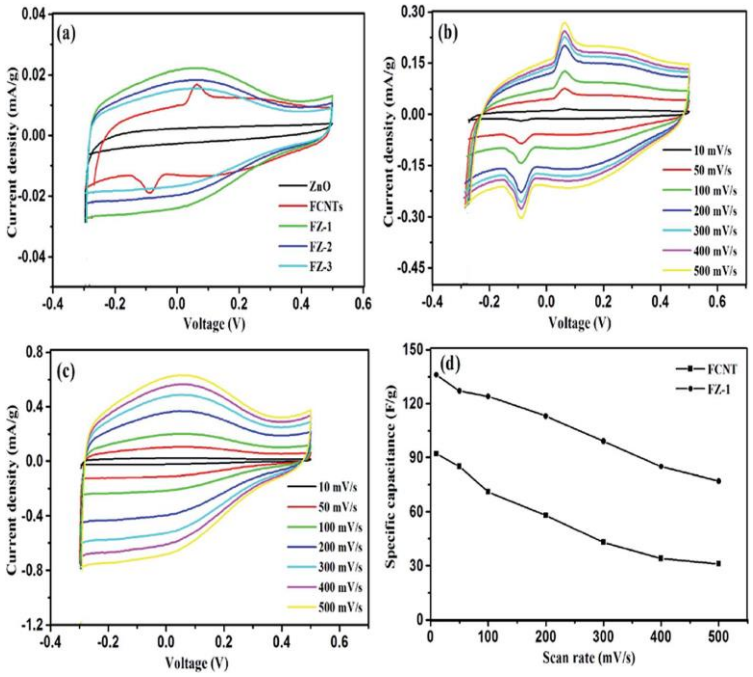


Related publications:

K. M. Samant, J. S. Suroshe and **S. S. Garje**, European J. Inorg. Chem., **(3)** (2014) 499-505.

Applications of nanocomposites in supercapacitors.

Carbon nanotube/ZnO composites coated on a glassy carbon electrode have been found to be better suprcapacitor materials.



Related publication:

J. S. Suroshe and **S. S. Garje**, J. Mater. Chem. A**, 3** (2015) 15650–15660.

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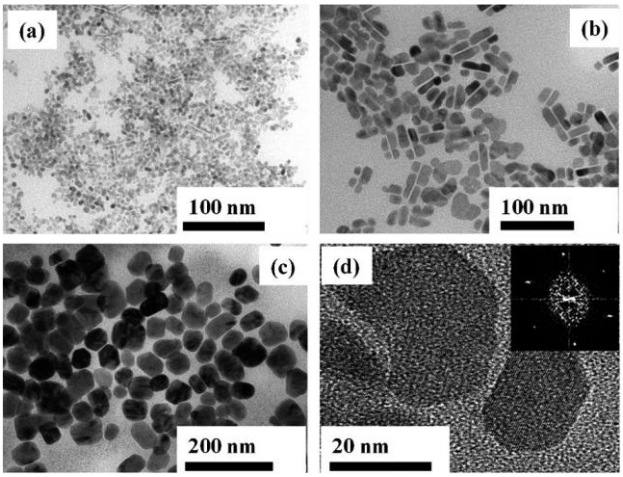
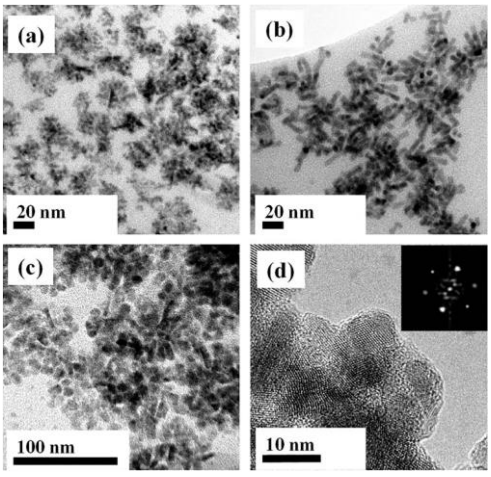
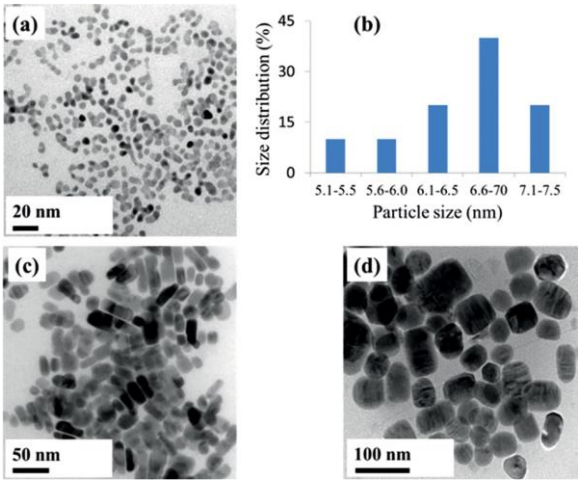
Study of Morphological Influence of halide moieties in the precursors.



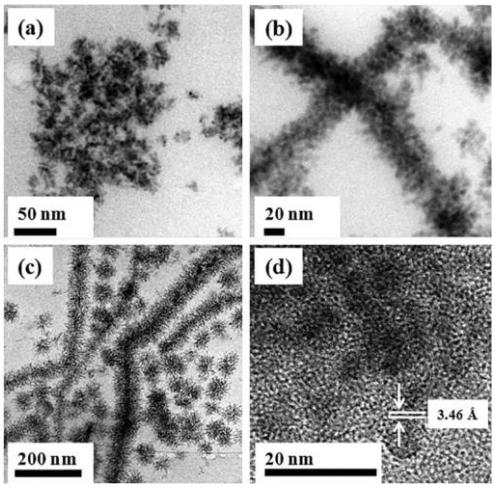
TEM images of CdS nanoparticles synthesized from Bis (cinnamaldehyde thiosemicarbazone) cadmium(II) Chloride



TEM images of CdS nanoparticles synthesized from Bis(cinnamaldehyde Thiosemicarbazone) cadmium(II) Iodide



TEM images of CdS nanoparticles synthesized from Bis(4-fluoroacetophenone Thiosemicarbazone) cadmium(II) Chloride



TEM images of CdS nanoparticles synthesized from Bis(4-fluoroacetophenone Thiosemicarbazone) cadmium(II) Iodide

Related publication:

A. S. Pawar, S. C. Masikane, S. Mlowe, **S. S. Garje** and N. Revaprasadu, European J. Inorg. Chem., **(3)**, (2016) 366-372.

Publications

Book chapter

1. CIGS and CIS Nanomaterials for Solar Cells.

   S. S. Garje, J. S. Suroshe and N. Revaprasadu, Nanoscience & Nanotechnology Series No. 45

   Nanostructured Materials for Type III Photovoltaics, Edited by Peter Skabara and Mohammad Azad Malik, © The Royal Society of Chemistry 2018, Pages 367 – 392.

   DOI: http://dx.doi.org/10.1039/9781782626749-00367

Journal papers

1. Synthesis and characterization of dibutylgermanium(IV) dialkylthiophosphates.

   S. S. Garje, V. B. Mokal and V. K. Jain, Indian J. Chem., **34A** (1995) 809-810.

   DOI: http://nopr.niscair.res.in/handle/123456789/40279

2. Triorganoantimony(V) bis(dialkylthiophosphates): Synthesis and characterization.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **18 (8)** (1995) 387-390.

   DOI: https://doi.org/10.1515/MGMC.1995.18.8.387

3 Synthesis and characterization of organoarsenic(III) dialkylthiophosphates.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **19 (6)** (1996) 355-360.

   DOI: https://doi.org/10.1515/MGMC.1996.19.6.355

4. Synthesis and characterization of alkylarsenic(III) dialkylmono- and –dithiophosphates.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **20 (4)** (1997) 217-222.

   DOI: https://doi.org/10.1515/MGMC.1997.20.4.217

5. Synthesis and characterization of organoarsenic(III) xanthates and dithiocarbamates.

   X- ray crystal structures of $RAs(S_2CNEt_2\}_2$, R = Me and Ph.

   S. S. Garje, V. K. Jain and E. R. T. Tiekink, J. Organomet.Chem., **538** (1997) 129-134.

   DOI: https://doi.org/10.1016/S0022-328X(96)06905-7

6. Synthesis and characterization of triorgano-arsenic(V) and –antimony(V) complexes of 2-pyridinol and 2-methoxyphenol.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **20 (12)** (1997) 755-760.

   DOI: https://doi.org/10.1515/MGMC.1997.20.12.755

7. Synthesis and characterization of triorganoarsenic(V) and –antimony(V) diphenylphosphinates.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **21 (2)** (1998) 77-83.

   DOI: https://doi.org/10.1515/MGMC.1998.21.2.77

8. Synthesis and characterization of arsacycloalkanes and their palladium and platinum complexes, and X-ray structure of $[PdCl_2(PhAsCH_2CH_2CH_2CH_2CH_2)_2]$.

   S. S. Garje, V. K. Jain and B. Varghese, App. Organomet. Chem., **13** (1999) 47-51.

   DOI:http://onlinelibrary.wiley.com/doi/10.1002/(SICI)1099-0739(199901)13:1%3C47::AID-AOC813%3E3.0.CO;2-Y/full

9. The chemistry of organo-arsenic, antimony and bismuth compounds: An overview.

   S. S. Garje and V. K. Jain, Main Group Met. Chem., **22 (1)** (1999) 45-58.

   DOI: https://doi.org/10.1515/MGMC.1999.22.1.45

10. Synthesis of tertiary arsines containing N, N'-dimethylaminobenzyl group.

    S. S. Garje and V. K. Jain, Indian J. Chem., **40A** (2001) 983-985.

    DOI: http://nopr.niscair.res.in/handle/123456789/18563

11. Chemistry of arsenic, antimony and bismuth compounds derived from xanthtate, dithiocarbamate and phosphorus based ligands.

    S. S. Garje and V. K. Jain, Coord. Chem. Rev., **236** (2003) 35-56.

    DOI: https://doi.org/10.1016/S0010-8545(02)00159-5

12. Triphenylantimony(V)dichloride molecular adducts with some thiosemicarbazones.

    K. Dalvi, M. Pal and **S. S. Garje**, Indian J. Chem., **43A** (2004) 1667-1671.

    DOI: http://nopr.niscair.res.in/handle/123456789/20411

13. Synthesis, characterization and biological activity of some triphenylantimony(V) monochlorosemicarbazone complexes.

    N. V. Sawant and **S. S. Garje**, Main Group Met. Chem., **28 (4)** (2005) 213-221.

    DOI: https://doi.org/10.1515/MGMC.2005.28.4.213

14. Chemical vapour deposition of II-VI semiconductor thin films using $M[(TeP^{i}Pr_2)_2N]_2$ (M = Cd, Hg) as single-source precursors.

    S. S. Garje, J. S. Ritch, D. J. Eisler, M. Afzaal, P. O'Brien and T. Chivers, J. Mat. Chem., **16** (2006) 966-969.

    DOI: http://pubs.rsc.org/en/content/articlelanding/2006/jm/b515362j#!divAbstract

15. A new route to antimony telluride nanoplates from a single-source precursor.

    S. S. Garje, D. J. Eisler, J. S. Ritch, M. Afzaal, P. O'Brien, and T. Chivers, J. Am. Chem. Soc., **128 (10)** (2006) 3120-3121.

    DOI: http://pubs.acs.org/doi/abs/10.1021/ja0582408

16. Aerosol-assisted chemical vapour deposition of indium telluride thin films from $\{In(\mu\text{-}Te)[N(^{i}Pr_2Pte)_2]\}_3$.

    S. S. Garje, M. C. Copsey, M. Afzaal, P. O'Brien, and T. Chivers, J. Mat. Chem., **16** (2006) 4542-4547.

    DOI: http://pubs.rsc.org/en/content/articlelanding/2006/jm/b608700k#!divAbstract

17. Growth of semiconductor thin films and nanoparticles using single-source precursors: An overview.

    S. D. Disale, Y. S. Niwate, and **S. S. Garje**, Bionano Frontier, **1 (1)** (2007) 1-6. ISSN 0974-0678.

    DOI: http://bionanofrontier.org/vol-1-issue-1-2007/

18. Synthesis and spectral studies of some bismuth(III) and (V) thiosemicarbazone complexes.

    J. B. Biswal and **S. S. Garje**, Main Group Met. Chem., **30 (2-3)** (2007) 75-82.

    DOI: https://doi.org/10.1515/MGMC.2007.30.2-3.75

19. Tribenzyltin(IV)chloride thiosemicarbazones: Novel single-source precursors for growth of SnS thin films.

    B. P. Bade, **S. S. Garje**, Y. S. Niwate, M. Afzaal and P. O'Brien, Chem. Vap. Dep., **14** (2008) 292-295.

    DOI: http://onlinelibrary.wiley.com/doi/10.1002/cvde.200806687/full

20. A convenient synthesis of nanocrystalline chalcopyrite, $CuFeS_2$ using single-source precursors.

    S. D. Disale and **S. S. Garje**, Appl. Organomet. Chem., **23** (2009) 492-497.

    DOI: http://onlinelibrary.wiley.com/doi/10.1002/aoc.1553/full

21. Synthesis, characterization and biological activity studies of phenylarsenic(III) semi- and thio-semicarbazones.

    J. B. Biswal, **S. S. Garje** and B. L. Jadhav, Main Group Met. Chem., **32 (6)** (2009) 297-308.

    DOI: https://doi.org/10.1515/MGMC.2009.32.6.297

22. Growth of nanocrystalline FeS and FeS_2 using iron (II) cinnamaldehyde thiosemicarbazone complexes as single-source precursors.

    S. D. Disale and **S. S. Garje**, Adv. Sci. Lett., **3 (1)** (2010) 80-86.

    DOI: https://doi.org/10.1166/asl.2010.1092

23. Preparation of nanostructured zinc oxide from single source precursors.

    A. M. Palve and **S. S. Garje**, Synth. React. Inorg. Met.-Org. Nano-Met. Chem., **40** (2010) 153-156.

    DOI: http://www.tandfonline.com/doi/full/10.1080/15533171003629071

24. Deposition of rod-shaped antimony sulfide thin films from single-source antimony thiosemicarbazone precursors.

    J. B. Biswal, N. V. Sawant and **S. S. Garje**, Thin Solid Films, **518 (12)** (2010) 3164-3168.

    DOI: https://doi.org/10.1016/j.tsf.2009.08.046

25. Preparation of palladium sulfide nanocrystallites using palladium thiosemicarbazones as single-source precursors.

    A. V. Gole and **S. S. Garje**, II National Conference on Advanced Materials-processing, characterization and applications (NCAM-2010) proceedings, (2010) 60-64. ISBN 93-80697-09-0.

26. Single source precursor approach to prepare tin sulfide nanocrystallites and thin films.

    Y. S. Niwate and **S. S. Garje**, American Inst. Phys. Proceedings, **1276** (2010) 56-61. ISBN 978-0-7354-0825-8.

    DOI: http://doi.org/10.1063/1.3504342

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53. Preparation of nanoscale zinc oxide from single-source molecular precursor.

    A. M. Palve and **S. S. Garje**, National seminar on 'Recent advances in materials sciences' (RAMS-2014), MPAS College, Panvel- 410206, India, 18 Jan. 2014.

    P-26.

54. Synthesis and characterization of cobalt sulfide nanocrystallites and its use as catalyst for photodegradation of methylene blue.

    A. S. Pawar and **S. S. Garje**, 16th CRSI National Symposium in Chemistry (NSC-16), Department of Chemistry, Indian Institute of Technology-Bombay, Mumbai, India, 7-9 February 2014.

    Abstr. No. 436.

55. ZnO/Carbon Spheres Composite for Photocatalytic Degradation of Methyl Orange.

J. S. Suroshe and **S. S. Garje**, 5th Interdisciplinary Symposium on Materials Chemistry (ISMC-2014),

Bhabha Atomic Research Centre, Mumbai, INDIA, organized by Society for Materials Chemistry, India, 9-13 December 2014.

Abstr. No. O-104.

56. Photocatalytic Degradation of Crystal Violet using CdS Nanocrystallites and CdS-OMWCNT Composite under UV Light Irradiation.

A.S. Pawar and **S. S. Garje**, 5th Interdisciplinary Symposium on Materials Chemistry (ISMC-2014),

Bhabha Atomic Research Centre, Mumbai, INDIA, organized by Society for Materials Chemistry, India, 9-13 December 2014.

Abstr. No. C-114.

57. Synthesis, Characterization and Photocatalytic Properties of CdS Nanoparticles Dotted on the Surface of Carbon Nanotubes.

A.S. Pawar and **S. S. Garje**, 17th CRSI National Symposium in Chemistry (NSC-17), National Chemical Laboratory, Pune, India, 6-8 February 2015.

Poster-89.

58. Photocatalytic activity of ZnO/FCNT (1:1) and ZnO/FCNT (2:1) composites.

J. S. Suroshe and **S. S. Garje**, 17th CRSI National Symposium in Chemistry (NSC-17), National Chemical Laboratory, Pune, India, 6-8 February 2015.

Poster-119.

59. Synthesis, characterisation and applications of carbon spheres and their composites with metal sulphide/metal oxides

J. S. Suroshe and **S. S. Garje**, National Conference on Advances and Innovations in Chemical Sciences (NCAICS-2015), Department of Chemistry, University of Mumbai, Mumbai- 400098, India, 12-13 February 2015.

OP-1.

60. Synthesis and characterization of Cu_2S and Cu_9S_5 nanoparticles and their application as photocatalysts

H. A. Shaikh, J. S. Suroshe and **S.S. Garje**, National Conference on Advances and Innovations in Chemical Sciences (NCAICS-2015), Department of Chemistry, University of Mumbai, Mumbai-400098, India, 12-13 February 2015.

PP-19

61. Photocatalytic activity of CdS and CdZnS nanoparticles

S. S. Sawant, J. S. Suroshe and **S. S. Garje**, National Conference on Advances and Innovations in Chemical Sciences (NCAICS-2015), Department of Chemistry, University of Mumbai, Mumbai-400098, India, 12-13 February 2015.

PP-18

62. PbS nanoparticles as catalyst for the photocatalytic degradation of methylene blue and crystal violet

S. R. Godage, A. S. Pawar and **S. S. Garje**, National Conference on Advances and Innovations in Chemical Sciences (NCAICS-2015), Department of Chemistry, University of Mumbai, Mumbai-400098, India, 12-13 February 2015.

PP-17

63. Synthesis and characterization of CdS nanoparticles and their photocatalytic activity for the degradation of organic dyes

S. T. Palkar, A. S. Pawar and **S. S. Garje**, National Conference on Advances and Innovations in Chemical Sciences (NCAICS-2015), Department of Chemistry, University of Mumbai, Mumbai-400098, India, 12-13 February 2015.

PP-16

64. Synthesis, characterization and photocatalytic degradation studies of metal chalcogenides and their carbon based composites.

A.S. Pawar and **S.S. Garje**, 27th Research Scholars' Meet, Indian Chemical Society-Mumbai branch, Sathye College, Vile Parle (E), Mumbai–400 057, India, 20-21 Feb. 2015.

Abstr. No.1

65. High temperature phase transformation of iron sulfide.

S. Mlowe, N. Revaprasadu and **S. S. Garje**

65th Annual conference on applications of X-ray analysis, Denver X-ray conference, Illinois, USA, 1-5 August 2016.

D-123

66. Functionalized Carbon Nanotube/ZnO Composite Materials for Supercapacitors.

J. S. Suroshe and **S. S. Garje**, 6th Interdisciplinary Symposium on Materials Chemistry (ISMC-2016),

Bhabha Atomic Research Centre, Mumbai, INDIA, organized by Society for Materials Chemistry, India, 6-10 December 2016.

Abstr. No. O-111.

67. Synthesis, characterization and applications of carbon based materials and their composites with transition metal chacogenide nanoparticles.

J. S. Suroshe and **S. S. Garje**, 29th Research Scholars' Meet, Indian Chemical Society-Mumbai branch, St. Xaviers' College, Dhobi Talao, Mumbai–400 001, India, 17-18 Feb. 2017.

Abstr. No.13

68. Synthesis and characterization of zinc chlcogenides and their carbon based composites for photodegradation of dyes and supercapacitors.

J. S. Suroshe and **S. S. Garje**, 8th Indian Youth Science Congress, University of Mumbai, Mumbai-400098, India, February 16-18, 2017.

69. Synthesis of bare and surfactant coated TiO_2 nanoparticles and their photocatalytic activity under visible light irradiation.

A. Ansari, R. A. Badhe and **S. S. Garje**, National Conference on Recent Developments in Chemical Sciences (RDCS-2018)' organized by Department of Chemistry, University of Mumbai, Mumbai-400098 during 8-9 March 2018.

OP-2.

70. Solvothermal synthesis of cadmium sulfide nanoparticles fabricated from surfactants using single source precursor and their photocatalytic activity under visible light irradiation.

R. A. Badhe, A. Ansari and **S. S. Garje**, National Conference on Recent Developments in Chemical Sciences (RDCS-2018)' organized by Department of Chemistry, University of Mumbai, Mumbai-400098 during 8-9 March 2018.

PP-73.

71. Synthesis and characterization of bare and surfactant assisted silver nanoparticles via green route.

    K. Shaikh, B. B. Mane, A. Ansari and **S. S. Garje**, National Conference on Recent Developments in Chemical Sciences (RDCS-2018)' organized by Department of Chemistry, University of Mumbai, Mumbai- 400098 during 8-9 March 2018.

    PP-33.

72. Preparation of cadmium oxide nanoparticles using rhizome extract and its photocatalytic study.

    P. L. Salaskar, S. S. Colaco, R. A. Badhe and **S. S. Garje**, National Conference on Recent Developments in Chemical Sciences (RDCS-2018)' organized by Department of Chemistry, University of Mumbai, Mumbai- 400098 during 8-9 March 2018.

    PP-64.

73. Green synthesis of silver nanoparticles and theoir application in photocatalytic degradatuin of methylene blue.

    B. B. Mane, A. Ansari and **S. S. Garje**, National seminar on Recent trends in Science and Technology for sustainable development 2018' (RTSTSD-2018)' organized by The Institute of Science, Mumbai, Mumbai -400 032 during 22-23 March 2018.

    P-7.

74. Synthesis of lead oxide nanoparticles using Zingiber Officinate extract via solvothermal method for photocatalytic degradation of crystal violet dye.

    P. L. Salaskar, R. A. Badhe and **S. S. Garje**, National seminar on Recent trends in Science and Technology for sustainable development 2018' (RTSTSD-2018)' organized by The Institute of Science, Mumbai, Mumbai -400 032 during 22-23 March 2018.

    P-10.

75. Low-temperature solvothermal synthesis of CdS@TiO_2 nanocomposites as high performance photocatalysts for degradation of RhB under solar light irradiation.

    R. A. Badhe, A. Ansari and **S. S. Garje**, 7^{th} Interdisciplinary Symposium on Materials Chemistry (ISMC-2018),Bhabha Atomic Research Centre, Mumbai, INDIA, organized by Society for Materials Chemistry, India, 4-7 December 2018.

    Abstr. No. C-110.

Back to home

Other conferences/symposia/winter school/workshop attended

1. Workshop on "Technical Reporting Skills", organized by Indian Chemical Society-Mumbai branch, held at Wilson College, Mumbai-400 007 on 14th Dec. 1996.
2. Workshop on "Research in Chemistry at College Level-Problems and Perspectives", organized by Indian Chemical Society-Mumbai branch, held at Wilson College, Mumbai-400 007 on 22nd Sept. 2000.
3. "38th Annual Convention of Chemists" held at Jai Narayan Vyas University, Jodhpur during 26-29 Dec. 2001.
4. Winter school on "Main Group Chemistry", held at I.I.T.-Bombay, Mumbai – 400 076 during 18-30 March 2002
5. "National Workshop on Advanced Methods for Materials Characterization (NWMC)" organized by Materials Research Society of India (MRSI), held at CTCRS Auditorium, Anushaktinagar, Mumbai – 400 094 during 11-15 Oct. 2004.
6. MC7-Functional Materials of 21st Century, organized by Royal Society of Chemistry, UK, held at University of Edinburgh, UK during 5-8 July 2005.
7. Characterization of Nanostructured Systems, organized by UGC-DAE Consortium for Scientific Research, Mumbai Centre & Department of Physics, University of Mumbai, held at Department of Physics, University of Mumbai, India during 14-16 June 2007.
8. Computational Drug Discovery in Pharma R & D, organized by School of Pharmacy and Technology Management, SVKM's NMIMS University, Mumbai, India during 6-7 August 2007.
9. DST's SERC Winter School in "Bioinorganic Chemistry" held at I.I.T.-Bombay, Mumbai – 400 076 during 17-30 November 2007.
10. Resource Generation Camp in Chemistry (a part of Indian Chemistry Olympiad Programme) held at Homi Bhabha Centre for Science Education, Mumbai – 400 088 during 1-5 October 2008.
11. Workshop on 'Microscopy for Nanomaterials' held at Department of Physics, University of Mumbai, India on 26th March 2009.
12. One day lecture series 'INSPIRE' organized by Department of Physics, University of Mumbai, India on 22nd February 2011.

Invited lectures delivered at various universities and research institutes

1. Organometallic chemistry.

   UGC refresher course in Inorganic Chemistry organized by Department of Chemistry, University of Pune (5th April 1999).

2. Some aspects of acid-base and redox reactions in inorganic chemistry.

   UGC refresher course in Inorganic Chemistry organized by Department of Chemistry, University of Pune (7th April 1999).

3. Organometallics.

   UGC refresher course in "Instrumental Techniques in Chemistry" organized by Department of Chemistry, University of Mumbai (2nd December 2000).

4. Synthesis and structural elucidation of some organo-arsenic and –antimony compounds.

   UGC refresher course in Organometallics and Materials Science organized by Department of Chemistry, University of Mumbai

   (Oct. 2001).

5. Preparation of inorganic materials: Role of organometallic compounds.

   UGC refresher course in Organometallics and Materials Science organized by Department of Chemistry, University of Mumbai

   (Oct. 2001).

6. Molecule to materials.

   State level seminar on "Recent trends in Analytical Chemistry" organized by S.S.G.M. College, Kopargaon, Maharashtra (17th Feb. 2007).

7. Single molecule precursors-A novel route to semiconductor thin films.

   National Seminar organized by Dnyanprassarak Mandal's College of Arts, Science and Commerce, Mapusa, Goa (9th March 2007).

8. Science beyond basic needs.

   UGC Summer School on 'Recent Advances in Basic Sciences' organized by Academic Staff College and Department of Chemistry, University of Mumbai (14th August 2008).

9. Characterization of inorganic molecules and materials.

   UGC refresher course in Analytical Chemistry organized by Department of Chemistry, University of Pune (29th November 2008).

10. Development in inorganic materials.

    'Two days state level seminar on Recent Advances in Chemistry' held at Department of Chemistry, C. K. Thakur College, Panvel (9th January 2009).

11. Chemical routes for development of inorganic materials.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Goa University (31st March 2009).

12. A Journey through organometallic chemistry.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Goa University (31st March 2009).

13. Designing of molecular precursors for inorganic materials.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (8th December 2009).

14. Semiconductor nanoparticles and thin films.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Babasaheb Ambedkar Marathwada University (16th December 2009).

15. Organometallic chemistry-An overview.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Babasaheb Ambedkar Marathwada University (16th December 2009).

16. Novel chemical routes for functional materials.

    UGC sponsored state level seminar on 'New trends in chemistry' organised by MPASC college, Panvel (9th February 2010).

17. Preparation of metal chalcogenide nanoparticles and thin films using single-molecule precursors.

    UGC-SAP sponsored workshop on 'Synthesis of nanomaterials' organised by Department of Physics, University of Mumbai, Mumbai-400098, India (23rd February 2010).

18. Use of coordination compounds for the preparation of inorganic materials.

    National Seminar on "Advances in Coordination Chemistry" organized by Rajarshi Chhatrapati Shahu College, Kolhapur – 416 003, India (18th August 2010).

19. Inorganic materials.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (6th October 2010).

20. Organometallic chemistry.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (16th October 2010).

21. Simple chemical routes for the preparation of nanoparticles and thin films.

    UGC sponsored 'State Level Workshop on Chemistry of Materials' Shri. Pancham Khemraj College, Sawantwadi (5th March 2011).

22. Novel single-source precursors approach for the preparation of metal chalcogenide nanoparticles and thin films.

    UGC refresher course in Pure and Applied Chemistry organized by the Department of Chemistry, Goa University (8th April 2011).

23. Organometallic compounds.

    UGC refresher course in Pure and Applied Chemistry organized by the Department of Chemistry, Goa University (8th April 2011).

24. Mössbauer spectroscopy.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (9th December 2011).

25. Instrumental techniques for the characterization of nanomaterials and thin films.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (9th December 2011).

26. Simple chemical routes for the preparation of metal chalcogenide nanoparticles and thin films.

    State Level Seminar on Synthesis and Characterization of Nanomaterials, Vikas College, Mumbai (11th February 2012).

27. Preparation of nanomaterials and thin films: A novel single-source precursors approach.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Sant Gadge Baba Amravati University, Amravati (24th March 2012).

28. Organometallic chemistry.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Sant Gadge Baba Amravati University, Amravati (24th March 2012).

29. Conventional chemistry, unconventional routes for the preparation of inorganic materials.

    UGC refresher course in Chemistry organized by Department of Chemistry, University of Pune (25th May 2012).

30. Organometallic chemistry: theory and applications.

    UGC refresher course in Chemistry organized by Department of Chemistry, University of Pune (25th May 2012).

31. Development of simple molecular precursors for the preparation of nanomaterials and thin films.

    Department of Chemistry, University of Zululand (15th March 2013).

32. Preparation of nanomaterials and thin films: Chemical approach.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Babasaheb Ambedkar Marathwada University (22nd July 2013).

33. Coordination compounds-Theory and applications.

    National Conference on "Recent Trends in Co-ordination Chemistry" Organised by Department of Chemistry, K. B. Patil College, Vashi (4 October 2013).

34. Coordination chemistry.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (12th November 2013).

35. Organometallics,

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (25th November 2013).

36. Chemical routes to nanomaterials and thin films.

    UGC refresher course in Chemistry organized by Department of Chemistry, University of Pune (14th November 2013).

37. Nanomaterials and thin films.

    National seminar on 'Recent advances in materials sciences' (RAMS-2014), MPAS College, Panvel- 410206 (18 Jan. 2014).

38. Molecules to materials.

    5th International Conference on Nanoscience & Nanotechnology (NanoAfrica2014) organized by South African Nanotechnology Initiative, held at Vaal University of Technology, Vanderbijlpark, South Africa (31st March 2014)

39. Coordination compounds- A convenient route to nanomaterials and thin films.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Babasaheb Ambedkar Marathwada University (23rd June 2014).

40. Coordination chemistry and nanomaterials.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (28th October 2014 & 10th November 2014).

41. Single-source Molecular Precursors- A Facile Route to Nanomaterials and Thin Films.

    5th Interdisciplinary Symposium on Materials Chemistry (ISMC-2014),

    Bhabha Atomic Research Centre, Mumbai, INDIA, organized by Society for Materials Chemistry, India, (13th December 2014).

42. Preparation of semiconductor nanoparticles and thin films via bottom up approach.

    UGC refresher course in Chemistry organized by the Department of Physics, University of Mumbai (27th December 2014).

43. Recent advances in coordination chemistry.

    UGC refresher course in Chemistry organized by the Department of Chemistry, Babasaheb Ambedkar Marathwada University (26th June 2015).

44. Nanomaterials: Preparation, properties and few applications.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (25th October 2016).

45. Nuclear magnetic Resonance (NMR)-A molecular signature.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (7th November 2017).

46. Tuning properties of nanomaterials for smart applications.

    UGC refresher course in Chemistry organized by the UGC-Human Resource Development Centre, S. P. Pune University, Pune held at Modern College of Arts, Science and Commerce, Pune-411005 (13th Oct 2018).

47. Nanotechnology: One solution for many problems.

    UGC refresher course in Chemistry organized by the Department of Chemistry, University of Mumbai (20th November 2018).

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