

## Curriculum Vitae

**Dr. Shubhankar Kumar Bose**  
Associate Professor,  
Centre for Nano and Material  
Sciences Jain University, Jain Global  
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### Research Interests

- Borylation reactions catalyzed by metal nanoparticles.
- Synthesis of metal boryl (mono and bimetallic) complexes and their reactivity.
- Organometallic chemistry: synthesis of compounds featuring metal-(main group element) multiple bonds.
- Utilization of CO and CO<sub>2</sub> to value added products via recyclable catalyst.

### Work experience (*in chronological order*)

S.No.	Positions held	Name of the Institute	From	To
1.	Research Associate	Indian Institute of Technology Madras, Chennai	01.07.2011	21.01.2012
2.	Alexander von Humboldt (AvH) postdoctoral fellow	University of Würzburg Germany	01.04.2012	31.03.2014
3.	Postdoctoral fellow	University of Würzburg, Germany	01.04.2014	31.01.2017
4.	Assistant Professor	CNMS, Jain University, Bangalore	01.02.2017	31.04.2021
5.	Associate Professor	CNMS, Jain University, Bangalore	01.05.2021	Till date

### Academic Qualification (Undergraduate Onwards)

S. No.	Degree	Year	Subject	University/Institution	% of marks
1.	B.Sc.	June, 2002	Chemistry	University of Rajasthan, Jaipur	72.63 %
2.	M.Sc.	May, 2004	Chemistry	Department of Chemistry, University of Rajasthan, Jaipur	73.00 %
3.	Ph.D.	July, 2011	Inorganic Chemistry	Indian Institute of Technology Madras, Chennai	<i>Best thesis award</i>

**Ph.D. thesis title**, Guide's Name, Institute/Organization/University, Year of

Award.Title of Thesis: *Chemistry of Metallaboranes of Group 5 Transition Metals*

Guide's Name: *Dr. Sundargopal Ghosh*

Institute: ***Indian Institute of Technology Madras***, Chennai

Year of Award: *July 2011*

### Professional Recognition/Award/Prize/Certificate, Fellowship

S.No.	Name of Award	Awarding Agency	Year
1	Member of Royal Society of Chemistry (MRSC)	Royal Society of Chemistry	2021
2	Life Membership of Catalysis Society Of India	Catalysis Society Of India	2021
3	"Werner prize" - Best Ph.D. thesis in Inorganic and Analytical Chemistry	Indian Institute of Technology Madras	2012
4	Alexander von Humboldt postdoctoral fellowship	Alexander von Humboldt Foundation, Germany	2012
5	Senior research fellowship	CSIR UGC-India	2008
6	Junior research fellowship	CSIR UGC-India	2006
7	Qualified Graduate Aptitude Test in Engineering (GATE-2005)	IIT Bombay	2005

### Details of Sponsored or Consultancy Projects Undertaken

Grant agency	Title of the project and reference number	Duration (from mm/yy to mm/yy)	Amount in lakh Rs.
SERB	Multiple Bonds between Transition Metals and Group 13 Elements: Synthesis and Reactivity Studies (EMR/2017/000844)	03/2019 to 02//2022	<b>54.84</b>
CSIR	Synthesis and Reactivity of Nucleophilic Diborane Compounds	01/08/2021 to 31/07/2024	<b>24.00</b>

### Details of PG and PhD Students Guidance (completed)

S. No.	Name of Student	Thesis Title	PG or PhD level	Year
1	Mahadev Laxman Shegavi	Metal Oxide Nanoparticles Catalyzed Organoboranes Syntheses and Reactivity Studies	PhD	2017-2020 <b>PhD defended: 7<sup>th</sup> Jan. 2021</b>
2	Ms. MEGHANA D V	Cu-Nanoparticles Catalyzed $\beta$ -Boration of $\alpha,\beta$ -Unsaturated Carbonyl Compounds with	PG	2017-2019

		Bis(pinacolato)diboron		
3	Poola Madhav	CeO <sub>2</sub> NPs catalyzed hydroboration of carbonyl compounds	PG	2019-2021
4	Anindita Bhattacharjee	Synthesis of bimetallic CoFe <sub>2</sub> O <sub>4</sub> nanoparticles as a catalyst for the alkenes hydroboration	PG	10 <sup>th</sup> March 2021 to 10 <sup>th</sup> May 2021
5	Thungchibeni M.khuvung	<i>Utilization of Bimetallic ZnFe<sub>2</sub>O<sub>4</sub> Nanoparticles as a catalyst for the Alkenes Hydroboration</i>	PG	10 <sup>th</sup> March 2021 to 10 <sup>th</sup> May 2021
6	Ms. Chomen Sena	Copper Nanoparticles-Catalysed Hydroboration of Alkenes	PG	27 <sup>th</sup> January 2020 to 27 <sup>th</sup> March 2020 ( <i>external student</i> )
7	Ms. Prajitha Nair P	Reusable CeO <sub>2</sub> -Nanoparticles Catalyzed Efficient and Selective Hydroboration of Aldehydes	PG	27 <sup>th</sup> January 2020 to 27 <sup>th</sup> March 2020 ( <i>external student</i> )
8	Ms. Kavitha Salian	Cu-Nanoparticles Catalyzed Borylation of Alkyl Halides with Bis(pinacolato)diboron Reagents	PG	3 <sup>rd</sup> June, 2019 to 20 <sup>th</sup> July, 2019 ( <i>external student</i> )

### Details of PG and PhD Students Guidance (On-going)

S. No.	Name of Student	Thesis Title	UG or PG or PhD level	Year
1	Ms. Aishwarya P	MOF (Metal–Organic Framework) Supported Metal Oxide Nanoparticles Catalyzed C-H Borylation Reactions	PhD	2021-ongoing
2	Ms. Suma B	Low Valent Phosphorus Compounds: Synthesis and Reactivity Studies	PhD	2021-ongoing
3	Mr. Patil Kiran Sangram (CSIR-NET)	Supported Metal/Metal Oxide Nanoparticles Catalyzed C-H and C-X Borylation Reactions	PhD	2020-ongoing
4	Mr. Suresh Saini	MWCNT Supported Metal/Metal Oxide Nanoparticles Catalyzed C-B Bond Formation Reactions	PhD	2019-ongoing

5	Mr. Ramesh R. Bhawar	Graphene Oxide Supported Metal/Metal Oxide Nanoparticles Catalyzed Organoboranes Syntheses	PhD	2019-ongoing
6	Ms. Siri M	NiO NPs catalyzed hydrosilylation of carbonyl compounds and alkenes	PG	2021-ongoing

### Memberships of Program Committees of Top Tier Conferences

- Chairperson of a Session in the *International Conference on “Energy and Environmental Technologies (V-ICSEET-2020)*, on 2<sup>nd</sup>–4<sup>th</sup> November 2020, REVA University, Bangalore, India.
- Chairperson of a Session in the 2<sup>nd</sup> National Seminar on Aug 31<sup>st</sup>–4<sup>th</sup> Sep 2020, CNMS, Jain University, Bangalore, India.
- Chairperson of a Session in the *International Conference on Frontiers in materials from Basic Science to Real-time Applications*” at CNMS-Jain University, India during March 13-16, 2019.
- Chairperson of a Session in the *National Seminar on Frontiers of Materials and Chemical Sciences*, at CNMS during 30 - 31<sup>st</sup> August 2018, Jain University, Bangalore, India.
- Chairperson of a Session in the International Conference on Green Methods for Separation, Purification and Nanomaterial Synthesis (GMSP&NS-2018) on 24<sup>th</sup>-25<sup>th</sup> April 2018, at CNMS, Jain University, Bangalore, India.

### Publications list

#### Publication Summary

Total number of published papers: 43

Cumulative impact factor (CIF): **345.161** (based on 2020)

Citations: 1706

*h*-index: 25

#### CNMS Affiliation with Corresponding Author (\*)

**2022**

43. Basappa, S.; Bhawar, R.; Nagaraju, D. H.; **Bose, S. K.**,\* Recent advances in the chemistry of the phosphathynolate and arsaethynolate anions. *Dalton Trans.* 2022, DOI: 10.1039/d1dt03994f (**I.F. 4.390**) Online only 2021: ISSN 1477-9234

**2021**

42. **Bose, S. K.**,\* Mao, L.,\* Kuehn, L.; Radius, U.,\* Nekvinda, J.; Santos, W. L.,\* Westcott, S. A.,\* Steel, P. G.,\* Marder, T. B.,\* First-Row d-Block Element-Catalyzed Carbon-Boron Bond Formation and Related Processes. *Chem. Rev.* 2021, 121,

41. Bhawar, R.; Patil, S. K.; **Bose, S. K.**,\* CeO<sub>2</sub>-nanocubes as efficient and selective catalysts for the hydroboration of carbonyl groups. *New J. Chem.* 2021, **45**, 15028-15034 (I.F. 3.591). **Online only 2021**: ISSN 1369-9261  
(Invited article for the special themed issue: *Boron & Beyond: Celebrating Todd B. Marder's Contributions to Chemistry*)
40. Shegavi, M. L.; Saini, S.; Vishwantha, M. D.; **Bose, S. K.**,\* Efficient and recyclable copper nanoparticles-catalyzed hydroboration of alkenes and  $\beta$ -borylation of  $\alpha,\beta$ -unsaturated carbonyl compounds with B<sub>2</sub>pin<sub>2</sub>. *Adv. Synth. Catal.* 2021, **363**, 2408-2416 (I.F. 5.837). Online ISSN:1615-4169  
(Designated as *Very Important Publication* & featured in the **inside cover** of the ASC special issue on boron)

#### 2020

39. Saini, S.; Agarwal, A.; **Bose, S. K.**,\* *Transition Metal Chemistry of Heavier Group 14 Congener Triplebonded Complexes: Syntheses and Reactivity*. *Dalton Trans.* 2020, **49**, 17055-17075 (I.F. 4.390) Online only 2021: ISSN 1477-9234
38. Agarwal, A.; **Bose, S. K.**,\* *Bonding Relationship between Silicon and Germanium with Group 13 and Heavier Elements of Groups 14–16*. *Chem Asian J.* 2020, **15**, 3784– 3806 (I.F. 4.568) Online ISSN:1861-471X
37. Mao, L.; **Bose, S. K.**,\* *Hydroboration of Enynes and Mechanistic Insights*. *Adv. Synth.Catal.* 2020, **362**, 4174-4188 (I.F. 5.837) Online ISSN:1615-4169
36. Shegavi, M. L.; Agarwal, A.; **Bose, S. K.**,\* Efficient synthesis of alkylboronic esters via magnetically recoverable copper nanoparticlecatalyzed borylation of alkyl chlorides and bromides. *Green Chem.* 2020, **22**, 2799–2803 (I.F = 10.182) **Online only 2021**: ISSN 1463-9270

#### 2019

35. Shegavi, M. L.; **Bose, S. K.**,\* Recent advances in the catalytic hydroboration of carbonyl compounds *Catal. Sci. Technol.* 2019, **9**, 3307–3336. (I.F = 6.119) **Online only 2021**: ISSN 2044-4761

#### 2018

34. Shegavi, M. L.; Baishya, A.; Geetharani, K.; **Bose, S. K.;**\* Reusable Fe<sub>2</sub>O<sub>3</sub> nanoparticle catalysed efficient and selective hydroboration of carbonyl compounds. *Org. Chem. Front.* 2018, 5, 3520-3525. (I.F = 5.281) Online only 2021: ISSN 2052-4129
33. Verma, P. K.; Shegavi, M. L.; **Bose, S. K.;**\* Geetharani, K., A nano-catalytic approach for C–B bond formation reactions. *Org. Biomol. Chem.* 2018, 16, 857-873. (I.F = 3.876) Online only 2021: ISSN 1477-0539

#### 2017

32. Scharnagl, F. K.; **Bose, S. K.;**\* Marder, T. B., Acylboranes: synthetic strategies and applications. *Org. Biomol. Chem.* 2017, 15, 1738-1752. (I.F = 3.876) Online only 2021: ISSN 1477-0539

(Selected as *Inside Front Cover Page* & designated as *Hot Article*)

#### During Post-doctoral and PhD studies

#### 2016

31. **Bose, S. K.;** Brand, S.; Oluwatola Omoregie, H.; Haehnel, M.; Maier, J.; Bringmann, G.; Marder, T. B., Highly efficient synthesis of alkylboronate Esters *via* Cu(II)-catalyzed borylation of unactivated alkyl bromides and chlorides in air. *ACS Catal.* 2016, 6, 8332-8335. (I.F = 13.84) Web Edition ISSN: 2155-5435

#### 2015

30. **Bose, S. K.;** Marder, T. B., A leap ahead for activating C-H bonds, *Science* 2015, 349, 473-474. (I.F = 41.845) print ISSN 0036-8075; online ISSN 1095-9203
29. **Bose, S. K.;** Deibenberger, A.; Eichhorn, A.; Steel, P. G.; Lin, Z.; Marder, T. B., Zinc-Catalyzed Dual C-X and C-H Borylation of Aryl Halides. *Angew. Chem. Int. Ed.* 2015, 54, 11843. (I.F = 15.336) ISSN: 1433-7851 (print). 1521-3773 (online)  
(Highlighted in: *Synfacts* 2015, 11(12), 1308; Contributors: P. Knochel, J. M. Hammann)
28. Ji, L.; Fucke, K.; **Bose, S. K.;** Marder, T. B., Iridium-Catalyzed C-H Borylation of

Pyrene: Irreversibility and the Influence of Ligand on Selectivity. *J. Org. Chem.* 2015, 80, 661. (I.F = 4.354) Print Edition ISSN: 0022-3263 Web Edition ISSN: 1520-6904.

## 2014

27. **Bose, S. K.**; Marder, T. B., Efficient Synthesis of Aryl Boronates via Zinc-Catalyzed Cross-Coupling of Alkoxy Diboron Reagents with Aryl Halides at Room Temperature. *Org. Lett.* 2014, 16, 4562. (I.F = 6.005) Print Edition ISSN: 1523-7060 Web Edition ISSN: 1523-7052  
(Highlighted in: *Synfacts*2014, 10(11), 1193; Contributors: P. Knochel, J. M. Hammann)
26. **Bose, S. K.**; Fucke, K.; Liu, L.; Steel, P. G.; Marder, T. B., Zinc-Catalyzed Borylation of Primary, Secondary and Tertiary Alkyl Halides with Alkoxy Diboron Reagents at Room Temperature. *Angew. Chem. Int. Ed.* 2014, 53, 1799. (designated as "Hot Paper"). (I.F = 15.336) ISSN: 1433-7851 (print). 1521-3773 (online)  
(Highlighted in: *Synfacts*2014, 10(5), 0516; Contributors: P. Knochel, D. Hass)

## 2013

25. Roy, D. K.; **Bose, S. K.**; Anju, R. S.; Mondal, B.; Ramkumar, V.; Ghosh, S., Boron Beyond the Icosahedral Barrier: A 16-Vertex Metallaborane. *Angew. Chem. Int. Ed.* 2013, 52, 3222. (I.F = 15.336) ISSN: 1433-7851 (print). 1521-3773 (online)
24. **Bose, S. K.**; Roy, D. K.; Shankhari, P.; Yuvaraj, K.; Mondal, B.; Sikder, A.; Ghosh, S., Syntheses and Characterization of New Vinyl-Borylene Complexes by the Hydroboration of Alkynes with  $[(\square_3\text{-BH})(\text{Cp}^*\text{RuCO})_2(\square\text{-CO})\text{Fe}(\text{CO})_3]$ . *Chem.-Eur. J.* 2013, 19, 2337. (I.F = 5.236) Online ISSN: 1521-3765

## 2012

23. Krishnamoorthy, B. S.; Thakur, A.; Chakrahari, K. K. V.; **Bose, S. K.**; Hamon, P.; Roisnel, T.; Kahlal, S.; Ghosh, S.; Halet, J-F., Theoretical and Experimental Investigations on Hypoelectronic Heterodimetallaboranes of Group 6 Transition Metals. *Inorg. Chem.* 2012, 51, 10375. (I.F = 5.165) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X
22. Roy, D. K.; **Bose, S. K.**; Anju, R. S.; Ramkumar, V.; Ghosh, S., Synthesis and Structure of Dirhodium Analogue of Octaborane-12 and Decaborane-14. *Inorg. Chem.* 2012, 51, 10715. (I.F = 5.165) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X

21. Ponniah, S. J.; Bharathan, J. K.; **Bose, S. K.**; Ghosh, S., Synthesis and Characterization of Novel Eleven-Vertex Dimetallaheteroborane Clusters Containing Heavier Group 16 Elements. *J. Organomet. Chem.* 2012, 721-722, 42. (**I.F = 2.369**) ISSN: 0022-328X
20. Roy, D. K.; **Bose, S. K.**; Geetharani, K.; Chakrahari, K. K. V.; Mobin, S. M.; Ghosh, S., Synthesis and Structural Characterization of Novel Divanada- and Diniobaboranes Containing Chalcogen Atoms. *Chem. Eur. J.*, 2012, 18, 9983. (**I.F = 5.236**) Online ISSN:1521-3765
19. Ponniah, J.; **Bose, S. K.**; Ghosh, S., An Eleven-Vertex Metallaborane with Tetracapped Pentagonal Bipyramidal Geometry. *Dalton Trans.* 2012, 41, 3627. (**I.F = 4.390**) Online only 2021: ISSN 1477-9234
18. Geetharani, K.; **Bose, S. K.**; Ghosh, S., Heterometallic Cubane-Type Clusters Containing Group 13 and 16 Elements. *Pure Appl. Chem.* 2012, 84, 2233. (**I.F = 2.453**) ISSN printed 0033-4545; ISSN electronic 1365-3075

## 2011

17. **Bose, S. K.**; Geetharani, K.; Ghosh, S., C-H activation of arenes and heteroarenes by early transition metallaborane, [(Cp\*Ta)<sub>2</sub>B<sub>5</sub>H<sub>11</sub>] (Cp\* = η<sup>5</sup>-C<sub>5</sub>Me<sub>5</sub>). *Chem. Commun.* 2011, 47, 11996. (**I.F = 6.222**) Online only 2021: ISSN 1364-548X
16. **Bose, S. K.**; Ghosh, S., Novel 11-vertex, 11-skeletal electron pair tantalaborane of unusual shape. *Organometallics* 2011, 30, 4788. (**I.F = 3.876**) Print Edition ISSN: 0276-7333; Web Edition ISSN: 1520-6041
15. **Bose, S. K.**; Geetharani, K.; Sahoo, S.; Reddy, K. H. K.; Varghese, B.; Jemmis, E. D.; Ghosh, S., Syntheses, characterization and electronic structures of new type of heterometallic boride clusters. *Inorg. Chem.* 2011, 50, 9414. (**I.F = 5.165**) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X
14. **Bose, S. K.**; Ghosh, S., Metallaheteroborane clusters of group 5 transition metals derived from dichalcogenide ligands. *J. Organomet. Chem.* 2011, 696, 3121. (**I.F = 2.369**) ISSN: 0022-328X
13. **Bose, S. K.**; Geetharani, K.; Varghese, B.; Ghosh, S., Condensed tantalaborane clusters: synthesis and structures of [(Cp\*Ta)<sub>2</sub>B<sub>5</sub>H<sub>7</sub>{Fe(CO)<sub>3</sub>}]<sub>2</sub> and [(Cp\*Ta)<sub>2</sub>B<sub>5</sub>H<sub>9</sub>{Fe(CO)<sub>3</sub>}]<sub>4</sub>. *Inorg. Chem.* 2011, 50, 2445. (**I.F = 5.165**) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X
12. Geetharani, K.; **Bose, S. K.**; Sahoo, S.; Varghese, B.; Mobin, S. M.; Ghosh, S.,



Cluster expansion reactions of group 6 and 8 metallaboranes using transition metal carbonyl compounds of groups 7-9. *Inorg. Chem.* 2011, *50*, 5824. (I.F = 5.165) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X

11. Geetharani, K.; **Bose, S. K.**; Basak, D.; Suresh, V. M.; Ghosh, S., A new entry into ferraborane chemistry: synthesis and characterization of heteroferraborane complexes. *Inorg. Chim. Acta* 2011, *372*, 42. (I.F = 2.545) ISSN: 0020-1693
10. Geetharani, K.; **Bose, S. K.**; Sahoo, S.; Ghosh, S., A family of heterometallic cubane-type clusters with an *exo*-Fe(CO)<sub>3</sub> fragment anchored to the cubane. *Angew. Chem. Int. Ed.* 2011, *50*, 3908. (I.F = 15.336) ISSN: 1433-7851 (print). 1521-3773(online)
9. Geetharani, K.; **Bose, S. K.**; Ghosh, S., Synthesis and structure of [Cp\**Ru*(CO)<sub>2</sub>(μ-H){*RuFe*<sub>3</sub>(CO)<sub>9</sub>}] : an unusual mixed-metal tetrahedral cluster with an exopolyhedral metal fragment. *Organometallics* 2011, *30*, 191. (I.F = 3.876) Print Edition ISSN: 0276-7333; Web Edition ISSN: 1520-6041

## 2010

8. Geetharani, K.; **Bose, S. K.**; Varghese, B.; Ghosh, S., From metallaborane to borylene complexes: syntheses and structures of triply bridged ruthenium and tantalum borylene complexes. *Chem. Eur. J.* 2010, *16*, 11357. (I.F = 5.236) Online ISSN:1521-3765
7. **Bose, S. K.**; Geetharani, K.; Ghosh, S., Ring expansion of a Cp moiety upon CO insertion: synthesis and characterization of [(η<sup>6</sup>-C<sub>6</sub>H<sub>5</sub>OC<sub>6</sub>H<sub>5</sub>)Co<sub>3</sub>(CO)<sub>9</sub>]. *J. Organomet. Chem.* 2010, *695*, 2567. (I.F = 2.369) ISSN: 0022-328X
6. **Bose, S. K.**; Geetharani, K.; Varghese, B.; Ghosh, S., Unusual organic chemistry of a metallaborane substrate: formation of a tantalaborane complex with a bridging acyl group (μ-η<sup>2</sup>). *Inorg. Chem.* 2010, *49*, 6375. (I.F = 5.165) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X
5. **Bose, S. K.**; Geetharani, K.; Ramkumar, V.; Varghese, B.; Ghosh, S., Chemistry of vanadaboranes: synthesis, structures and characterization of organovanadium sulfide clusters with disulfido linkage. *Inorg. Chem.* 2010, *49*, 2881. (I.F = 5.165) Print Edition ISSN: 0020-1669 Web Edition ISSN: 1520-510X

## 2009

4. Geetharani, K.; **Bose, S. K.**; Ramkumar, V.; Ghosh, S., An efficient route to group 6 and 8 metallaborane compounds. synthesis of *arachno*-[Cp\**Fe*(CO)B<sub>3</sub>H<sub>8</sub>] and *closo*-[(Cp\**M*)<sub>2</sub>B<sub>5</sub>H<sub>9</sub>] (M = Mo, W). *Eur. J. Inorg. Chem.* 2009, 1483. (I.F = 2.524) Online ISSN:1099-0682

3. **Bose, S. K.**; Geetharani, K.; Ramkumar, V.; Mobin, S. M.; Ghosh, S., Fine-tuning of metallaborane geometries: chemistry of metallaboranes of early transition metals derived from metal halides and monoborane reagents. *Chem. Eur. J.* 2009, *15*, 13483. (I.F = 5.236) Online ISSN:1521-3765

### 2008

2. **Bose, S. K.**; Geetharani, K.; Mobin, S. M.; Ghosh, S., Metallaboranes of the early transition metals: direct synthesis and characterization of  $(\eta^5\text{-C}_5\text{Me}_5\text{Ta})_2\text{B}_n\text{H}_m$  ( $n = 4, m = 10; n = 5, m = 11$ ),  $(\eta^5\text{-C}_5\text{Me}_5\text{Ta})_2\text{B}_5\text{H}_{10}(\text{C}_6\text{H}_4\text{CH}_3)$ , and  $(\eta^5\text{-C}_5\text{Me}_5\text{TaCl})_2\text{B}_5\text{H}_{11}$ . *Chem. Eur. J.* 2008, *14*, 9058. (I.F = 5.236) Online ISSN:1521-3765

### 2007

1. **Bose, S. K.**; Ghosh, S.; Noll, B. C.; Halet, J.-F.; Saillard, J.-Y.; Vega, A., Linked and fused tungstaborane clusters: synthesis, characterization, and electronic structures of *bis*- $\{(\eta^5\text{-C}_5\text{Me}_5\text{W})_2\text{B}_5\text{H}_8\}_2$  and  $(\eta^5\text{-C}_5\text{Me}_5\text{W})_2\{\text{Fe}(\text{CO})_3\}_n\text{B}_{6-n}\text{H}_{10-n}$ ,  $n = 0, 1$ . *Organometallics* 2007, *26*, 5377. (I.F = 3.876) Print Edition ISSN: 0276-7333; Web Edition ISSN: 1520-6041

### Book Chapter

S.No.	Title with page no.	Book Title	ISSN/ISBN No.	Whether peer reviewed
1	<i>Science of Synthesis: Advances in Organoboron Chemistry towards Organic Synthesis</i> , DOI: 10.1055/sos-SD-230-00188	Fernández, E., Ed.; Thieme:Stuttgart, (2019); p 335-354. Thieme Connect, the Thieme e-journals and e-books platform: <a href="https://www.thieme-connect.com/products/ebooks/lookinside/10.1055/sos-SD-230-00188">https://www.thieme-connect.com/products/ebooks/lookinside/10.1055/sos-SD-230-00188</a>	ISBN 9783131940919	yes

### Invited Presentations

- Bose, S. K.** (2021): “Boron in Cluster Chemistry and Catalysis” National Webinar

held during 30<sup>th</sup> June 2021 at K.L.E. SOCIETY'S, Raja Lakhamagouda Science Institute, Belagavi, Karnataka.

- **Bose, S. K.** (2021): “Reusable Nanocatalysis: An Efficient and Selective Synthesis of Organoboron Derivatives” National Webinar on Recent Advances in Chemical Sciences held during 24-25<sup>th</sup> March 2021 at P. G. Department of Chemistry, Berhampur University, Odisha.
- Shegavi, M. L.; **Bose, S. K.** (2018): “Efficient and Selective Hydroboration of Carbonyl Compounds via Reusable Nanoscale Fe<sub>2</sub>O<sub>3</sub> Catalyst” International Conference on Organometallics and Catalysis (ICOC 2018), at Holiday Inn Resort, Goa during Dec. 13-16, 2018
- Shegavi, M. L.; **Bose, S. K.** (2018): “Reusable Nanoscale Fe<sub>2</sub>O<sub>3</sub>-catalysed Efficient and Selective Hydroboration of Carbonyl Compounds” 1st International Symposium on Main-group Molecules to Materials (MMM), organized by Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, India. 28th-31st October, 2018.
- **Bose, S. K.** (2018): “Zinc(II)/Copper(II)-Catalyzed Synthesis of Alkyl and Aryl Boronates” One-day seminar on Bioinorganic Chemistry DST PURSE sponsored, organized by School of Chemistry, Madurai Kamaraj University, Madurai 625021, India. 22<sup>nd</sup> January, 2018
- **Bose, S. K.** (2017): New Perspectives and Thought-Provoking Boron Chemistry. “Recent Advances in Chemical Sciences” organized by Chemical Society, Department of Studies and Research in Chemistry, University College of Science, Tumkur University, Tumakuru, India. 24<sup>th</sup> November, 2017
- **Bose, S. K.** and Marder, T. B. (2016): Zinc-Catalyzed Borylation of Alkyl and Aryl Halides with Alkoxy Diboron Reagents: An Efficient Synthetic Route to Alkyl and Aryl Boronates. 22<sup>ND</sup> ISCB INTERNATIONAL CONFERENCE (ISCBC-2016): Recent Trends in Affordable and Sustainable Drug Discovery and Developments 6<sup>th</sup> - 8<sup>th</sup> February, 2016, Surat, India (*Invited Lecture*)

### Conferences Attended and Paper Presented

- 10 Bose, S. K. and Marder, T. B. (2015): Zinc-Catalyzed Borylation of Alkyl and Aryl Halides with Alkoxy Diboron Reagents: An Efficient Synthetic Route to Alkyl and Aryl Boronates. “Advances in Organic and Inorganic Chemistry– Enhancing International Cooperation” 16th November 2015, at the University of Wuerzburg, Germany. *Poster presentation*
- 9 Bose, S. K. and Marder, T. B. (2015): Zinc-Catalyzed Borylation of Alkyl and Aryl Halides with Alkoxy Diboron Reagents: An Efficient Synthetic Route to Alkyl and

- Aryl Boronates. VIII Heidelberg Forum of Molecular Catalysis at Heidelberg, Germany, June 12<sup>th</sup> 2015. **Poster presentation**
- 8 Bose, S. K., Fucke, K. and Marder, T. B. (2014): Zinc-Catalyzed Borylation of Alkyl and Aryl Halides with Alkoxy Diboron Reagents: An Efficient Synthetic Route to Alkyl and Aryl Boronates. XV IMEBORON, International Conference on Boron Chemistry at Prague, Czech Republic, 24-28 August 2014. **Oral presentation**
  - 7 Bose, S. K., Fucke, K. and Marder, T. B. (2013): Zinc-Catalyzed Borylation of Alkyl Halides, Including Tertiary Electrophiles, with Alkoxy Diboron Reagents. EuroBoron 6, European Conferences on Boron Chemistry at Radziejowice, Poland, September 2013. **Flash and Poster presentation.**
  - 6 Bose, S. K. and Ghosh, S. (2009): Fine-Tuning of Metallaborane Geometries: Metallaboranes of the Early Transition Metals Derived from the Reaction of Cp\*TaCl<sub>4</sub> and Cp<sub>n</sub>MCl<sub>4-x</sub> with LiBH<sub>4</sub> or BH<sub>3</sub>. (M = V: n, x = 2, 2; M = Nb: n, x = 1, 0; Cp = η<sup>5</sup>-C<sub>5</sub>H<sub>5</sub>, Cp\* = η<sup>5</sup>-C<sub>5</sub>Me<sub>5</sub>). Inorganic Ring Systems-12 at Goa, India, August 2009. **Oral presentation**
  - 5 Bose, S. K., Geetharani, K., Varghese, B., Mobin, S. M. and Ghosh, S. (2008): Metallaboranes of the Early Transition Metals. XIII IMEBORON, International Conference on Boron Chemistry at Platjad'Aro, Spain, September 2008. **Flash and Poster presentation.**
  - 4 Bose, S. K., Geetharani, K., Varghese, B., Mobin, S. M. and Ghosh, S. (2008): Exploration of Earlier Transition Metals. Synthesis and Spectroscopic Characterization of Tantalaboranes (η<sup>5</sup>-C<sub>5</sub>Me<sub>5</sub>Ta)<sub>2</sub>B<sub>5</sub>H<sub>10</sub>(C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>). 10<sup>th</sup> CRSI National Symposium in Chemistry at IISc Bangalore, India, February 2008. **Poster presentation.**
  - 3 Bose, S. K., Geetharani, K., Varghese, B., Mobin, S. M. and Ghosh, S. (2007): Exploration of Earlier Transition Metallaborane. Synthesis and Characterization of Tantalaboranes. Modern Trends in Inorganic Chemistry-XII at IIT Madras, India, December 2007. **Poster presentation.**
  - 2 Bose, S. K. and Kannan, S. (2006): Effect of Bivalent Metal Ion on Physicochemical and Selective Oxidation Behavior of CuM(II)Al Ternary Hydrotalcites Where M(II) =Mg, Co, Ni & Zn. National Workshop on Catalysis for Energy at BHU Varanasi, India, February 2006. **Poster presentation.**
  - 1 Bose, S. K. and Kannan, S. (2006): Synthesis, Characterization and Selective Oxidation Behavior of Mn-containing Ternary Hydrotalcites. 4<sup>th</sup> All Gujarat Research Scholars meet at Vadodara, India, January 2006. **Poster presentation.**

### **Best Paper Awards**

- **Shegavi, M. L.;** Bose, S. K.,\* Best paper award (*oral*) at the International virtual conference on Creative Research in Chemical Science & Allied Applications (CRCSA- 2020), SDM College, Ujire, Karnataka, India on 18<sup>th</sup>-19<sup>th</sup> Aug. 2020.

## Submitted Research Proposal

- 1) Title: Nucleophilic Symmetrical and Unsymmetrical Diboron Reagents: Syntheses and Reactivity Towards Organic Substrates (submitted)  
Agency: BRNS- New regular research  
projectAmount: ₹ 34,00,000.00  
Duration: 3 Years
- 2) Title: Cobalt and nickel nanoparticles: A Nano-Catalytic Approach for Borylation Reactions (submitted)  
Agency: Nano Science Scheme, Department of Science and Technology  
Amount: ₹ 45,36,000.00  
Duration: 3 Years

## Teaching Responsibilities

18MSCH2H04: Spectroscopy-II for M.Sc.

18MSCH2H01: Inorganic Chemistry-II for

M.Sc. 18MSCH3H01: Inorganic Chemistry-III  
for M.Sc.

PhD Course Work: Core paper-II and specialization papers for PhD course work

## Centre Responsibilities

- Coordinating invited talks and PhD seminar series at CNMS. Renowned speakers delivered talks at Centre for Nano and Material Sciences, Jain University.
- Involved in evaluations for M.Sc. Inorganic Chemistry and Spectroscopy papers, including internal examinations.
- Internal examiner for MSc final project dissertation viva examination.
- Member in various committees such as the student award committee, seminar evaluation committee and conferences organizing committee.
- Internal expert for the PhD defence of doctoral researchers.
- Involved in designing the bridge course syllabus for semester I (Inorganic Chemistry), and in the modification and advancement of PG chemistry course (Inorganic and Spectroscopy papers).

## Other Professional Activities

- **On the Manuscript Peer Review Panel of the following journals:**  
Chem.Comm., Advanced Synthesis & Catalysis, Inorganic Chemistry, Polyhedron, Journal of the Indian Chemical Society, Chemistry-An Asian Journal, Catalysis Science & Technology.
- Reviewer of the Grants proposals submitted to the Science and Engineering Research Board (SERB), India.