Curriculum Vitae of

PROF. RAMASWAMY MURUGAVEL FNA FASc FRSC

Biswas Palepu Distinguished Chair Professor & J. C. Bose National Fellow,
Department of Chemistry, Indian Institute of Technology-Bombay, Powai, Mumbai-400 076
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E-mail: rmv@chem.iitb.ac.in; muruks@iitb.ac.in; URL: www.chem.iitb.ac.in/~rmv
&
Honorary Professor, JNCASR, Jakkur, Bangalore

DATE (& PLACE) OF BIRTH July 30, 1964 (Alagramam, TN, India)

EDUCATION

B.Sc.	1984	University of Madras
M.Sc.	1987	University of Madras (Univ. 2nd rank)
Ph.D.	1993	Indian Institute of Science, Bangalore (awarded JC Ghosh Medal for the best thesis)

EMPLOYMENT

July 1993 - July 1994	Research Associate	IISc, Bangalore
Aug 1994 - Feb 1996	Alexander-von-Humboldt Fellow	Univ. Göttingen, FRG
Mar 1996 - Dec 1997	Research Scientist	Univ. Göttingen, FRG
Dec 1997 - Jan 2001	Assistant Professor	IIT Bombay
Feb 2001 - Feb 2005	Associate Professor	IIT Bombay
Aug 2008 - Sept 2008	Professor (deputation)	IIT Gandhinagar
Oct 2009 - Sept. 2010	Mercator Professor (W3)	Univ. Bochum, FRG
March 2005 onwards	Professor	IIT Bombay
Dec 2011 – Jan 2016	Head of the Department	IIT Bombay
May 2014 – May 2017	Chair Professor	IIT Bombay
Jan 2015 onwards	J. C. Bose National Fellow	IIT Bombay
Oct 2016 onwards	Honorary Professor	JNCASR
May 2017 onwards	Biswas Palepu Distinguished Chair Professor	IIT Bombay

RESEARCH INTERESTS

- Magnetism in molecules (SMMs and Qubits)
- Sensory materials
- Covalent organic frameworks (COFs) and Chemical Sensors
- Phosphate and phosphonate based framework solids
- Single source precursor chemistry for fine particle metal / mixed-metal oxides
- New layered solids and their exfoliation to 2-D Nanosheets
- Homogeneous and heterogeneous catalysis

FELLOWSHIPS

- Fellow, Indian National Science Academy (2014)
- Fellow, Indian Academy of Sciences (2009)
- Fellow, Royal Society of Chemistry (2009)
- J. C. Bose National Fellowship (2015)
- Swarnajayanti Fellowship (2002)
- Alexander von Humboldt Fellowship (1994)

AWARDS

- Conjoint Professor, Univ. of Newcastle, Australia (2019 onwards)
- SASTRA-CNR Rao Award in Chemistry & Materials Science (2019)
- Biswas-Palepu Distinguished Chair Professorship (2017)
- Institute Chair Professorship, IIT Bombay (2014)
- C.N.R. Rao National Prize for Chemical Sciences (2011)
- DAE-SRC Outstanding Research Investigator Award (2010)
- DAE Young Scientist Award (1999)
- S.C. Bhattacharya Award of IIT Bombay for Excellence in Research in Basic Sciences (2011)
- Chemical Research Society of India Bronze Medal (2005)
- Chemical Research Society of India Silver Medal (2017)
- Material Research Society of India Medal (2010)
- DFG Mercator Professorship in Germany (2009-2010)
- IIT Bombay Best Research Paper Award (3 times: 2007, 2011 and 2012)
- IIT Bombay Best Review Paper Award (2014)
- A.V. Rama Rao Foundation Prize (2010)
- J.C. Ghosh Medal (1993)

OTHER RECOGNITION / SERVICES

- Member, PAC in Inorganic and Inorganic Chemistry, SERB (DST) New Delhi, 2018-2021
- Sectional Committee, Fellows Selection, Chemical Sciences, INSA, 2018-2021
- Member, Teachers Award Committee, INSA, 2019-
- Vice-President, Chemical Research Society of India, 2017-2020
- MHRD appointed Council's Nominee, Faculty Selections at IISER Pune, 2016 - 2018
- Treasurer, CRSI Council-2014-2017
- Member, CRSI Council, 2008-2011, 2011-2014
- Academic Council Member of the new IIT Dharwad
- Member, PAC in Inorganic Chemistry, SERB (DST) New Delhi, 2012-2015
- Member, Research Council, CSIR-CECRI, Karaikudi , 2013-2016
- Convener, "CRSI-National Symposium in Chemistry", Feb. 07-09, 2014
- Convener, Symposium on "Recent Advances in Crystallography", Nov. 17, 2014
- Program Chair, Theme: Magnetic and Conductive Materials, ASCA 2013, Hong Kong
- Editorial Board Member, Synth React Inorg Met-Org Nano-Met Chem, 2008-

- Guest Editor: Two special issues of Synth React Inorg Met-Org Nano-Met Chem
- Guest Editor: "Journal of Chemical Sciences" – Special Issue on Chemical Crystallography
- Member, DST subject expert committee (Women Scientists Scheme)
- Member of DSIR expert committee (DSIR PAC)
- Subject Expert, Faculty Selection at Various Universities / Institutes
- Member, Academic Review Committee, IISER Pune
- Member, Academic Review Committee, IISER Thiruvananthapuram
- Member, Academic Review Committee, NISER Bhubaneshwar
- Member, INSPIRE Faculty Selection Committee
- Reviewer, D.S. Kothari Post-Doc Fellowships
- Convener, 'Chemistry of Functional Materials' (CFM 2009), August 14-16, 2009, Goa
- Convener, 'Chemistry of Functional Materials' (CFM 2011), August 12-14, 2011, Goa
- Convener, 'Chemistry of Functional Materials' (CFM2012), August 05-07, 2012, Goa
- Convener, "Chemical Frontiers" (CF2013), August 28-30, 2013, Goa
- Convener, "Chemical Frontiers" (CF2014), August 16-18, 2014, Goa
- Convener, "Chemical Frontiers" (CF2015), August 15-18, 2015, Goa
- Convener, "Chemical Frontiers" (CF2016), August 25-28, 2016, Goa
- Convener, "Chemical Frontiers" (CF2017), August 17-20, 2017, Goa
- Convener, "Chemical Frontiers" (CF2018), August 19-22, 2018, Goa
- Convener, "Chemical Frontiers" (CF2019), August 22-25, 2019, Goa
- Chair, Theme Symposium 'Hybrid Materials' ICAM-2007, Bangalore
- Member, Local Organizing Committee, IRIS-12, August 16-21, 2009.
- Treasurer & Organizing Comm. Member, NSC-8, CRSI, Feb. 2006
- Co-convener, First SERC School on Main Group Chemistry
- Referee for several national and international journals
- Referee for research proposals from UGC, DST, CSIR, and similar agencies
- Advisory Board Member, Several National and International Conferences

INSTITUTE / DEPARTMENTAL ADMINISTRATIVE TASKS

- Head, Department of Chemistry, Dec. 2011- Jan. 2016
- Member, IITB ISPC (Institute Strategy and Planning Committee), 2015 onwards
- Member, Committee for IRCC Research & Ind. Consultancy Awards, 2011
- Chairman, Committee for IRCC Research & Ind. Consultancy Awards, 2014
- Member, IIT Bombay I Year UG Curriculum Revision Committee, 2012-13
- Member, Foreign PhD Students Program Revision Advisory Committee, 2013
- Member, IIT Bombay Faculty Affairs Committee (IFAC), 2011-2014
- Member, IIT Bombay Internal MHRD Review Committee 2013-14
- Member, CRNTS-SAIF Action Plan Committee, IIT Bombay, 2013-14
- Member, Research Infrastructure Funding Committee (RIFC), IIT-Bombay. 2011-
- Member, Joint Program Committee, IGCAR –IIT Bombay Cell, 2010-2012
- Member, SAIF (RSIC) Facility Management Committee, 2007-2011
- Member, IRCC Advisory Committee, 2008-2010
- DUGC Secretary, Chemistry Department, 2000-2002

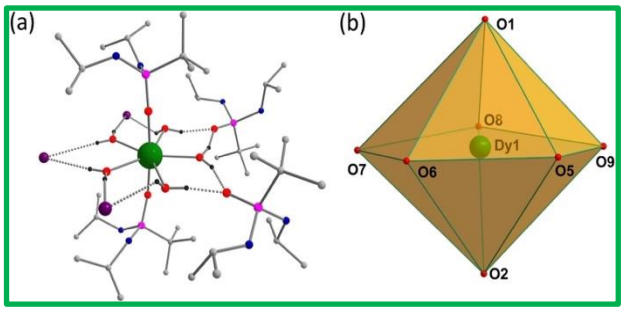
- DPGC Secretary, Chemistry Department, 2003-2006
- Seminar Secretary, Chemistry Department, 2000-2002
- Faculty In-charge, IR Spectrometer Facility, 1999-2002
- Faculty In-charge, Thermal Analysis Lab, 2002-2003
- Faculty In-charge, GC Lab, 2003-2008
- Joint Coordinator, M.Sc. Entrance Examination, 2001
- Overall Coordinator, M.Sc. Entrance Examination (JAT), 2002
- Annual Report Coordinator, 1999-2000, 2000-2001, 2001-2002
- Warden, Hostel-1, 2001-2004

SPONSORED RESEARCH OF PROF. MURUGAVEL

Title of the Project	Funding Agency	Starting Date	Ending Date	Budget (In Lakhs)
Studies on the Interactions of aminocarboxylic acids towards divalent group 2 metal ions	CSIR	1999	2002	10.0
Synthesis of new molecular titanosiloxanes and their phase immobilization inside mesoporous molecular sieves	BRNS	1999	2002	7.5
Synthetic Routes to Group 2 Metal Derivatives of Main Group Ligands …	DST	1999	2002	21.0
Organometallic Routes to Main Group Metal Carboxylates	CSIR	2002	2006	11.6
Swarnajayanti Fellowship	DST	2003	2009	110.0
Grace Project on Polymer Fillers	Grace, US	2005	2007	$170 K
Development of new Cu(II)-amine-phosphate and related complexes for polymerization …	DST	2006	2009	21.0
Studies on the Interactions of Amino Carboxylic Acids and Phosphonic Acids towards Alkaline Earth Metal Cations	CSIR	2010	2013	17.2
Organo and metal-organo-supramolecular assemblies based on 1,3,5-Triarylbenzenes	DST	2010	2013	34.6
DAE-SRC Outstanding Investigator Award	DAE	2011	2016	100.0
AMAT project on High-k Metal Precursors Chemistry	AMAT	2011	2012	$ 30 K
New Generation Molecular Magnets	Nanomission	2013	2016	~550.0
Hybrid Polyoxometalates (POMs) for Catalysis and Photocatalysis	SERB	2014	2017	49.0
J. C. Bose National Fellowship	SERB / DST	2015	2020	65.0
Thermally Labile Metal Monoalkyl phosphates: Precursors for ….	SERB / DST	2018	2021	57.3
CSIR Project on Covalent Organic Frameworks	CSIR	2019	2022	20
IMPRINT-II (just sanctioned) with GE Aviation	SERB/GE	2019	2022	~200
STARS (jointly with R. Vaidhyanathan) on Alkali Metal Ion Conductors	MHRD	2019	2022	~100
TOTAL RESEARCH GRANT				**Rs . >16 Crores**

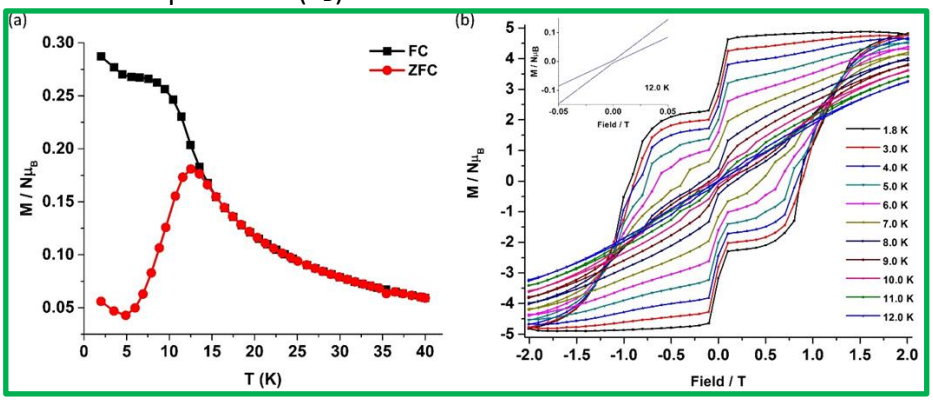
RESEARCH HIGHLIGHTS

(1) Single-Molecule and Single-Ion-Magnets based on 4f ions

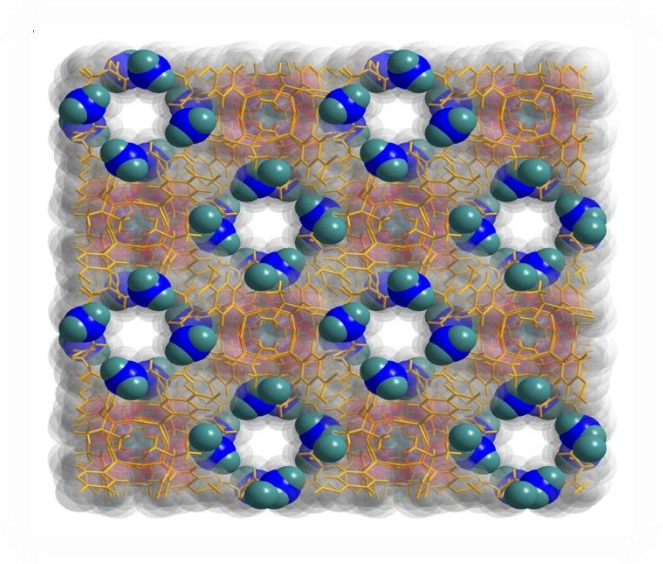


Single ion magnets (SIM), that exhibit magnetization blockade below a critical temperature (T_B), represent the ultimate size limit for future spin based devices. Raising T_B is an ongoing unresolved challenge in this area and lanthanide ions are found to be the most appealing candidates.

A strategy to circumvent this challenge is to quench the prominent deactivating quantum tunneling of magnetization (QTM) through appropriately designed molecules with higher order symmetry. We have recently reported air-stable Dy(III) and Er(III) complexes possessing pseudo-D_{5h} symmetry where the Dy(III) complex is found to possess record anisotropy barriers (U_{eff}) of 735.4 K, while the magnetization studies reveal opening up of the hysteresis at least up to 12 K (T_B) even at zero field**.** The combination of both high U_{eff} and T_B is the best observed for any SIMs. Ab initio calculations have been used to establish the connection between higher-order symmetry and quenching of QTM effects.

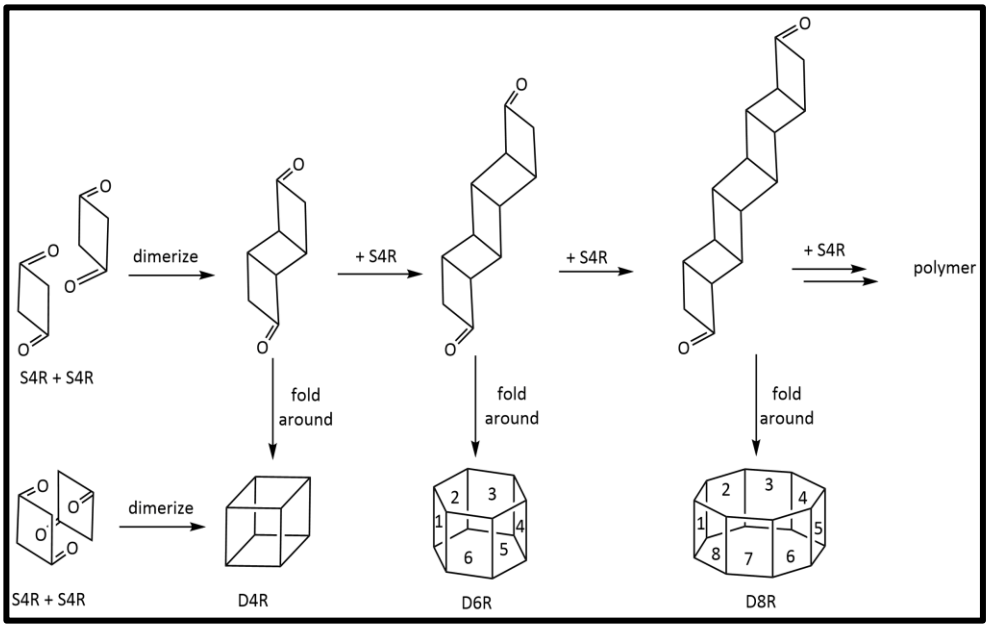


(2) Building designer zeolites through an hierarchical synthesis protocol



The beginning of independent research career of Murugavel had an accidental coincidence with the emergence of metal-organic-frameworks (MOFs) in the literature. Only years before that, there has been a lot of activity around the world to understand the formation of zeolitic structures and to this effect several model compounds have been synthesized to understand complicated silicate structures. In this direction, Murugavel's research group significantly contributed to the

development of suitable organic-soluble building blocks or SBUs by synthesizing a multitude of siloxanes, phosphonates, and more recently phosphates. Among the building blocks unraveled, structurally diverse D4R cubanes (with varying coordination numbers on the metal on the alternate vertices of the cubane) and extremely rare examples of S4R, S6R, and S8R SBUs need special mention. An outstanding contribution to this area is the demonstration of the fact that the transition metal phosphonates need not necessarily be always layered solids. The 2007 report of Murugavel on transition metal phosphonates with cubic cores opened up a new channel for investigations in metal-phosphonate chemistry including the possible use of these clusters as SMMs. An offshoot of these efforts was the report of 2001 concerning the only example of an organic soluble silicophosphonate by diligently combining silanol and phosphazane chemistry.

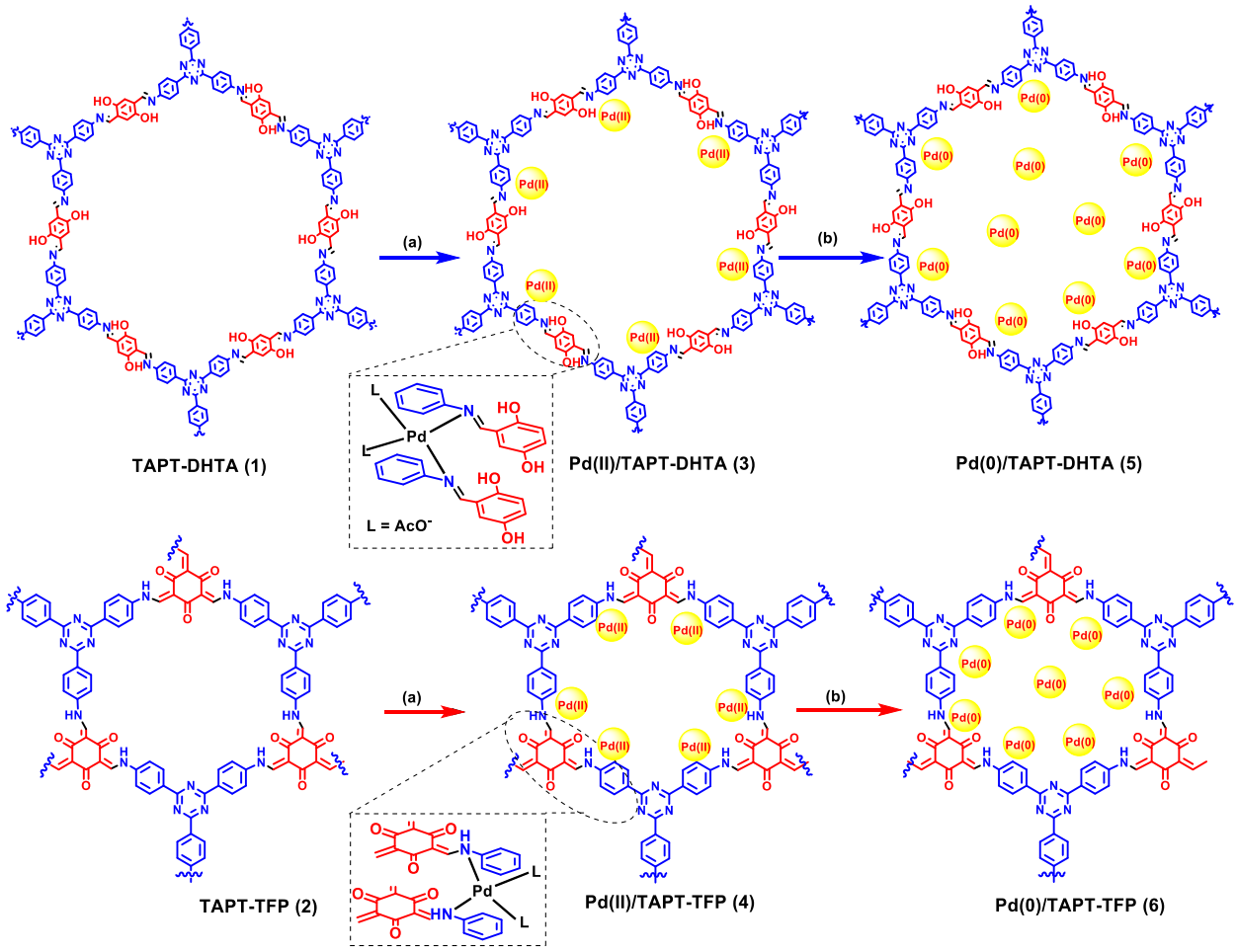


No doubt that the efforts of Murugavel's group on synthesizing models for zeoltic materials mentioned above are noteworthy, but what made a great impact of his contributions is the further perusal by his team to really make use of these molecules as real building blocks and just not treat them as model compounds. Taking a single zinc based di-isopropylphenyl phosphate D4R cluster as a typical example, and using H-bonding, coordinate bonding, and covalent bonding as the glue to combine these SBUs, Murugavel's group has demonstrated a novel approach to develop porous solids at room temperature and atmospheric pressure. The impact of these results of Murugavel is already evident from the large number of citations his recent published work is receiving. His group is already expanding this approach for room temperature synthesis of COFs (covalent organic frameworks).

(3) Covalent organic frameworks (COFs) for sensing, catalysis, and CO_2 capture

Fluorescence chemo-sensors for the species of environmental and biological significance have emerged as a major research area in recent years. In our group, we investigate fluorescence quenching as well enhancement based chemo-sensors obtained by using C_3-symmetric 1,3,5-triphenylbenzene (1,3,5-TPB) as the fluorescence signalling unit. 1,3,5-Triphenylbenzene is a thermally and photochemically stable fluorescent platform with π-electron-rich characteristics.

Starting from this platform, supramolecular, discrete, triphenylbenzene-carbazole, covalent-organic framework, covalent-organic polymer and conjugated polymer-based sensors have been developed for selective detection of polynitroaromatic compounds, trinitrotoluene (TNT), dinitrotoluene (DNT) and picric acid (PA). Tris-salicylaldiimine Schiff bases have been synthesized for selective sensing of fluoride ions through fluorescence turn-on mechanism. It is likely that it should be possible to develop other high selective and sensitive chemo-sensors by incorporating 1,3,5-TPB as the fluorophore unit.



Scheme 1. Synthesis of Pd embedded COFs; Conditions: (a) $Pd(OAc)_2$,CH_2Cl_2, 24 h, RT; (b) $NaBH_4$, MeOH, 48 h, RT.

(4) Developing synthetic strategies for thermally unstable precursors for ceramic phosphates

Soft Chemistry (*Chimie Douce*) is being successfully applied to the preparation of a large number of metal oxides by solid state chemists in the 1990s; these reactions were typically carried out under moderate conditions (typically T < 500 °C) and were primarily used for stabilizing / isolating metastable phases. A parallel development in this area was to prepare thermally unstable metal precursor complexes such as beta-diketonates and decompose them at fairly low temperatures to prepare metal oxides. However, this methodology could not be extended for the

synthesis of non-metal oxide materials such as metal silicates and phosphates mainly due to the lack of good synthons that decompose at fairly low temperatures. Tilley et al. had in fact developed an organometallic approach to prepare fine particle metal phosphates. This approach for example is only applicable to metals for which stable / commercial organometallic precursors are available (e.g. zinc phosphate from Me_2Zn) and not for metals such as Mn, Cu, Hg, etc.

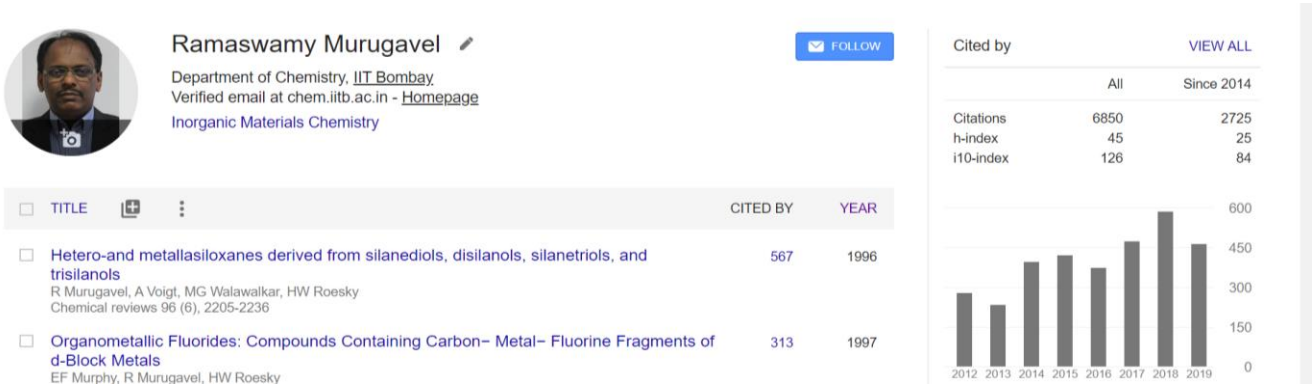
In 2001, Murugavel's group started to successfully address this problem by developing a non-organometallic strategy. A thermally and hydrolytically *unstable* diester of phosphoric acid, di-*tert*-butylphosphate, was identified as the most suitable precursor for this purpose in view of its high solubility in water as well as lipophilic solvents such as hexane. Exploiting its solubility in protic solvents and high thermal instability, Murugavel's group demonstrated its utility to produce ceramic phosphates at temperatures much below 300 ^{o}C, in some cases even at 175 ^{o}C. This work published in a serried of articles starting from 2001 has made a huge impact which is evident from a large number of citations for this work (at least minimum of 30 for each of the top ten articles published); the early results on this area were also reviewed by Murugavel in Acc. Chem. Res. (2004) and Chem. Rev. (2008).

(5) Unraveling coordination behavior of heavier s-block elements

Contributions in this area deals with the understanding of the fundamental coordination chemistry of alkaline earth metal ions with particular emphasis to the understanding of calcium ions biology. A work which initially commissioned to just understand the interaction of aminoacids / amino carboxylic acids with calcium ions in aqueous medium under physiological pH conditions, late percolated to a deeper understanding of fundamental coordination chemistry of group 2 metal ions, modulation of the hard/soft character of group 2 elements, and inclusion of pyridinic bases in the coordination sphere. Close to 20 papers published by Murugavel in this area are the best cited amongst all his publications. Three of these articles have already been cited some 70 times each. This body of research on s-block elements is comprehensive and probably the most exhaustive among all the research groups in this area.

List of Publications

Total Publications: 200+
Citations: 6800+
h-index: 45



from Google Scholar (APRIL 2019)

201 Easily Accessible Layered Alkali Metal Organophosphates: Synthesis, Structure and Water Assisted Proton Conductivity
S. K. Gupta, D. Dutta, S. Kuppuswamy, A. J. Bhattacharyya and R. Murugavel
Chem.-Euro. J. **2019**, *under revision*.

200 Editorial: Special issue on 150 years of the periodic table
E. D. Jemmis, J. N. Moorthy, and R. Murugavel
J. Chem. Sci. **2019**, 131: 113. DOI: 10.1007/s12039-019-1714-6

199 High-pressure crystallographic and magnetic studies of pseudo-D_{5h} symmetric Dy(III) and Ho(III) Single Molecule Magnets
M. Norre, C. Gao, S. Day, S. Gupta, A. Borah, R. Murugavel, G. Rajaraman, and J. Overgaard,
Inorg. Chem. **2019**, *58*, 0000-0000. DOI: 10.1021/acs.inorgchem.9b02962

198 An Unprecedented Structural and Functional Mimic for Copper Amine Oxidase
R. Jangir, M. Ansari, D. Kaleeswaran, G. Rajaraman, M. Palaniandavar, and R. Murugavel
ACS Catalysis, **2019,** *9,* 10940-10950. DOI: 10.1021/acscatal.9b02326

197 Ceramic and Framework Phosphates Derived from Mono and Diesters of Phosphoric Acid
R. Murugavel
Emergent Materials, **2019**, *2,* 273-294. DOI: 10.1007/s42247-019-00054-4

196 Facile Exfoliation of Single-Crystalline Copper Alkylphosphate van der Waals Solids to Single-Layer Nanosheets and Enhanced Supercapacitance

G. A. Bhat, S. Halder, D. Chakraborty, S. Verma, R. Vaidhyanathan and R. Murugavel
***Angew. Chem. Int. Ed.,* 2019**, *58*, 16844–16849. DOI: 10.1002/anie.201910157

195 Compositional Control as the key for achieving highly efficient OER electrocatalysis with cobalt phosphates decorated nanocarbon florets
J. Saha, S. Verma, R. Ball, C. Subramaniam, and R. Murugavel
***Small*, 2019**, 1903334. DOI: 10.1002/smll.201903334

194 A Single-electron Single-ion Cerous Magnet
Sandeep K. Gupta, S. Shanmugan, T. Rajeshkumar, G. Rajaraman and R. Murugavel
***Dalton. Trans.* 2019**, *48,* 15928-15935. DOI: 10.1039/c9dt03052b

193 Hitherto unknown eight-connected frameworks formed from $A_4B_4O_{12}$ metal organophosphate heterocubanes
K. Sharma, S. K. Gupta and R. Murugavel
***Chem. Commun*. 2019**, *55*, 7994-7997. DOI: 10.1039/C9CC01893J

192 Bimetallic nanoparticles anchored on core-shell support as an easily recoverable and reusable catalytic system for efficient nitroarene reduction
R. Antony, R. Marimuthu, and R. Murugavel
***ACS Omega,* 2019**, *4*, 9241-9250. https://doi.org/10.1021/acsomega.9b01023

191 A Compelling and Complete Account of p-Block Chemistry, A review of the book "The Chemistry of the p-Block Elements: Syntheses, Reactions and Applications" by Anil J. Elias.
R. Murugavel
***Resonance*, 2019**, *24*, 115-116. https://doi.org/10.1007/s12045-019-0761-0

190 Effect of benzoic acid substituents and additional functional groups of ancillary ligands in modulating the nuclearity and aggregation behavior of transition metal carboxylates
P. Rajakannu, D. Kaleeswaran, S. Banerjee, R. J. Butcher, R. Murugavel
***Inorg. Chim. Acta,* 2019**, *486*, 283-293, DOI: 10.1016/j.ica.2018.10.054

189 A decade of "Chemical Frontiers Goa"
R. Murugavel and C. N. R. Rao
***RSC Adv*., 2018**, *8*, 28602-28603. DOI: 10.1039/c8ra90068j

188 2,2',6,6'-Tetraisopropylbenzidine Based Sterically Encumbered Ditopic C2-Symmetric Ligand Systems and Supramolecular Building Blocks
R. Jangir, D. Kaleeswaran and R. Murugavel
***ChemSelect* 2018**, *3,* 8082-8094. DOI: 10.1002/slct.201801320

187 Thermolabile Organotitanium Monoalkyl Phosphates: Synthesis, Structures, Epoxidation Catalysts and Utility as Single Source Precursors for TiP_2O_7
G. A. Bhat, S. Verma, A. Rajendran and R. Murugavel

***Inorg. Chem.* 2018**, *57*, 7644-7654. DOI: 10.1021/acs.inorgchem.8b00611

185 Polydentate 4-Pyridyl-terpyridine Containing Discrete Cobalt Phosphonate and Polymeric Cobalt Phosphate as Catalysts for Alcohol Oxidation
G. A. Bhat, A. Rajendran, and R. Murugavel,
Z. Anorg. Allg. Chem.*, 2018,** *644,** 692-699**.** DOI: 10.1002/zaac.201800091

185 Bulky 2,6-Dibenzhydryl-4-methylphenyl β-diiminato Derived Complexes of Pd(II) and Cu(II): Efficient Catalysts for Suzuki Coupling and Alcohol Oxidation
P. Saxena and R. Murugavel
***J. Organomet. Chem.* 2018,** *868,* 76-85*.* DOI: 10.1016/j.jorganchem.2018.05.003

184 1,3,5-Triphenylbenzene: A Versatile Photoluminescent Chemo-sensor Platform and Supramolecular Building Block
P. Vishnoi, D. Kaleeswaran and R. Murugavel
***RSC Adv.* 2018**, *8,* 17535–17550. DOI: 10.1039/c8ra02658k

183 A [4+2] condensation strategy to a new class of imine-linked zinc organophosphate frameworks
R. Jangir, A. Ch. Kalita, S. K. Gupta, D. Kaleeswaran and R. Murugavel
***Chem. Euro.-J.* 2018**, *24*, 6178 – 6190; DOI: 10.1002/chem.201800149

182 Enriching lanthanide single ion magnetism through symmetry and axiality
S. K. Gupta and R. Murugavel
***Chem. Commun.* 2018**, *54*, 3685-3696; DOI: 10.1039/c7cc09956h

181 Synthesis, characterisation, nuclease and cytotoxic activity of phosphate-free and phosphate-containing copper 4′-(N-methylpyridinium)-2,2′:6′,2″ terpyridine complexes
G. A. Bhat, R. Maqbool and R. Murugavel
***J. Chem. Sci.* 2018**, *130*:21*;* DOI: 10.1007/s12039-018-1422-7.

180 Dinuclear Mn(II), Co(II) and Ni(II) Arylphosphates Containing 4′-Chloro-2,2′:6′,2′′-Terpyridine Co-ligand: Efficient Catalysts for Alcohol Oxidation
G. A. Bhat, A. Rajendran and R. Murugavel
***Euro. J. Inorg. Chem.* 2018**, 795-804; DOI: 10.1002/ejic.201701064.

179 Picric acid sensing and CO_2 capture by a sterically encumbered azo-linked fluorescent triphenylbenzene based covalent organic polymer
D. Kaleeswaran and R. Murugavel
***J. Chem. Sci.* 2018**, *130*:1; DOI: 10.1007/s12039-017-1403-2.

178 Is strong axial crystal-field the only essential condition for large magnetic anisotropy barrier? Case of non-Kramers Ho(III) versus Tb(III)
S. K. Gupta, T. Rajeshkumar, G. Rajaraman and R. Murugavel
Dalton Trans. **2018**, *47,* 357-366. DOI: 10.1039/C7DT04020B

177 Ethoxysilane appended M(II) complexes and their SiO_2/MCM-41 supported forms as catalysts for efficient oxidation of secondary alcohols,
R. Antony, R. Marimuthu, P. Vishnoi and R. Murugavel,
Inorg. Chim. Acta **2018**, *469*, 173–182; DOI: 10.1016/j.ica.2017.09.024

176 Delineating factors that dictate the framework of a bulky phosphate derived metal complexes: sterics of phosphate, anion of the metal salt and auxiliary N-donor ligand
P. Saxena and R. Murugavel
Inorg. Chim. Acta. **2018**, *469*, 353–365; DOI: 10.1016/j.ica.2017.08.033.

175 Rare supramolecular assemblies of a dicopper(II)-tetracarboxylate stabilized by (methanol)6, dimethylsulfoxide and 4,4'-azobipyridyl bridges
P. Vishnoi, D. Kaleeswaran, and R. Murugavel
ChemistrySelect **2017**, *2*, 12014–12018*.* DOI: 10.1002/slct.201702862

174 [Am]Mn$(H_2POO)_3$: A New Family of Hybrid Perovskites Based on the Hypophosphite Ligand
Y. Wu, S. Shaker, F. Brivio, R. Murugavel, P. D. Bristowe, and A. K. Cheetham
J. Am. Chem. Soc. **2017**, *139,* 16999–17002; DOI: 10.1021/jacs.7b09417.

173 Complex Structural Landscape of Titanium Organophosphonates: Mechanistic Insights and Catalysis
K. Sharma, R. Antony, A. Ch. Kalita, P. Davis, and R. Murugavel
Inorg. Chem. **2017**, *56*, 12848−12858; DOI: 10.1021/acs.inorgchem.7b01651

172 Bulky 2,6-Dibenzhydryl-4-methylaniline Derived Schiff Base Complexes of Pd(II) as Efficient Catalysts for Suzuki Coupling Reaction: Effect of Coordinated Anion on the Catalytic Activity
P. Saxena and R. Murugavel
ChemistrySelect, **2017,** *2***,** 9577–9585; DOI: 10.1002/slct.201702035

171 Catalysis and CO_2 capture by palladium incorporated covalent organic frameworks
D. Kaleeswaran, R. Antony, A. Sharma, A. Malani and R. Murugavel
ChemPlusChem **2017**, *82*, 1253–1265; DOI: 10.1002/cplu.201700342

170 Selective formation of discrete versus polymeric copper organophosphates: DNA cleavage and cytotoxic activity
G. A. Bhat, R. Maqbool, A. A. Dar, M. Ul Hussain and R.Murugavel,
Dalton Trans. **2017**, *46*, 13409–13420; DOI: 10.1039/C7DT02763J

169 Sterically Encumbered 2,6-Dibenzhydryl-4-methylphenyl Derived Ligand Systems:

Synthesis and Structures
P. Saxena, Shyam Mondal, Kamna Sharma and R. Murugavel
J. Chem. Sci. **2017**, *129*, 1499–1512; DOI: 10.1007/s12039-017-1353-8

168 Expedient Synthesis and Structures of Monoalkyl Phosphates: Single-Source Precursors for High-Yield Ceramic Phosphates
G. A. Bhat, A. Ch. Kalita and R. Murugavel
CrystEngComm **2017**, *19*, 5390–5401; DOI: 10.1039/c7ce01066d.

167 Lanthanide Organophosphate Spiro Polymers: Synthesis, Structure, and Magnetocaloric Effect in Gadolinium Polymer
S. K. Gupta, G. A. Bhat, and R. Murugavel
Inorg. Chem. **2017**, *56*, 9071–9083; DOI: 10.1021/acs.inorgchem.7b01100

166 A pyrene based azo-linked covalent organic polymer: Selective detection of picric acid and gas adsorption properties
S. K. Gupta, D. Kaleeswaran, S. Nandi, R. Vaidhyanathan and R. Murugavel
ACS Omega, **2017**, *2*, 3572–3582. DOI: 10.1021/acsomega.7b00515

165 Bulky 2,6-Dibenzhydryl-4-methylaniline Derived Schiff Base Complexes of Pd(II), Cu(II) and Co(II) as Efficient Catalysts for Suzuki Coupling and Alcohol Oxidation Reactions,
P. Saxena and R. Murugavel,
ChemistrySelect, **2017**, *2,* 3812–3822. DOI: 10.1002/slct.201700657

164 Pentanuclear Lanthanide Mono-organophosphates: Synthesis, Structure and Magnetism
S. K. Gupta, S. K. Langley, K. Sharma, K. S. Murray and R. Murugavel
Inorg. Chem. **2017**, *56*, 3946–3960. DOI: 10.1021/acs.inorgchem.6b03014

163 Triphenylbenzene Sensor for Selective Detection of Picric Acid
S. Nagendran, P. Vishnoi, and R. Murugavel
J. Fluorescence **2017**, *27,* 1299–1305. DOI: 10.1007/s10895-017-2063-9.

162 Metal Silicate and Phosphate Nanomaterials,
Pratap Vishnoi and R. Murugavel,
in ***Molecular Materials: Preparation, Characterization, and Applications*****,**
Eds**.** Sanjay Malhotra, B. L. V. Prasad, Jordi Fraxedas,
CRC Press, **2017**, Chapter 7, pp. 153-188; ISBN 9781482245950

161 Five different pseudo-polymorphs of 4-aminoarylphosphate: Supramolecular aggregation in organophosphates
K. Sharma, A. Ch. Kalita and R. Murugavel
CrystEngComm, **2017**, *19*, 1058–1070. DOI: 10.1039/c6ce02215d

160 Elusive Double-Eight-Ring Secondary Building Unit

S. K. Gupta, A. Ch. Kalita, A. A. Dar, S. Sen, G. N. Patwari, and R. Murugavel
J. Am. Chem. Soc. **2017**, *139*, 59–62. DOI: 10.1021/jacs.6b11156

159 Zinc Dialkylhydroxybenzoates with Unusual Structures: First Example of a Discrete Three-Blade Paddle-Wheel and a Solvent Engulfed Coordination Polymer
P. Vishnoi, S. K. Sharma, D. Kaleeswaran, and R. Murugavel
ChemistrySelect, **2016**, *1*, 6658–6668. DOI: 10.1002/slct.201601853

158 Alkyl-Chain-Separated Triphenybenzene - Carbazole Conjugates and their Derived Polymers: Candidates for Sensory, Electrical and Optical Materials
D. Kaleeswaran, P. Vishnoi, S. Kumar, S. Chithiravel, M. G. Walawalkar, K. Krishnamoorthy, and R. Murugavel
ChemistrySelect, **2016**, *1*, 6649–6657. DOI: 10.1002/slct.201601428

157 Dependence of the SBU length on the size of metal ions in alkaline earth MOFs derived from a flexible C_3-symmetric tricarboxylic acid
P. Vishnoi, D. Kaleeswaran, A. Ch. Kalita, and R. Murugavel
CrystEngComm, **2016**, *18*, 9130–9138. DOI: 10.1039/c6ce01821a

156 Unprecedented Zero Field Neodymium(III) Single-Ion Magnet Based on a Phosphonic Diamide,
S. K. Gupta, T. Rajeshkumar, G. Rajaraman, and R. Murugavel
Chem. Commun. **2016,** *52*, 7168–7171. DOI: 10.1039/c6cc03066a

155 Dimensionality Alteration and Intra- versus Inter-SBU Void Encapsulation in Zinc Phosphate Frameworks
A. A. Dar, G. A. Bhat, and R. Murugavel
Inorg. Chem. **2016**, *55*, 5180–5190. DOI: 10.1021/acs.inorgchem.5602949.

154 An Air-Stable Dy(III) Single-Ion Magnet with High Anisotropy Barrier and Blocking Temperature
S. K. Gupta, T. Rajeshkumar, G. Rajaraman, and R. Murugavel
Chem. Sci. **2016**, 7, 5181-5191. DOI: 10.1039/C6SC00279J.

153 A Solvent Switch for Stabilization of Multiple Hemiacetals on an Inorganic Platform: Role of Supramolecular Interactions
A. Ch. Kalita, S. K. Gupta, R. Murugavel
Chem.-Euro. J. **2016**, *22*, 6863 – 6875. DOI: 10.1002/chem.201600409.

152 Three-Fold C_3-Symmetric Off-On Fluorescent Chemo-Sensors for Fluoride Ions,
P. Vishnoi, S. Sen, G. N. Patwari, and R. Murugavel
J. Fluorescence **2016**, *26*, 997–1005. DOI 10.1007/s10895-016-1787-2

151 New Sterically Encumbered Arylimido Hexamolybdates for Organic Oxidation Reactions,
R. Jangir, R. Antony and R. Murugavel
New J. Chem., **2016**, *40*, 1004-1013. DOI: 10.1039/c5nj02330k

150 Octanuclear Zinc Phosphates with Hitherto Unknown Cluster Architectures: Ancillary Ligand and Solvent Assisted Structural Transformations Thereof
A. A Dar, S. Sen, S. K. Gupta, G. N. Patwari, and R. Murugavel
Inorg. Chem. **2015**, *54*, 9458-9469. DOI: 10.1021/acs.inorgchem.5b01308

149 Anhydrous Manganese Hypophosphite Dense Framework Solid $[Mn(H_2PO_2)]_n$: Synthesis, Structure and Magnetic Studies
G. A. Bhat, P. Vishnoi, S. K. Gupta and R. Murugavel
Inorg. Chem. Commun. **2015**, *59*, 84-87. DOI: 10.1016/j.inoche.2015.07.006

148 [3 + 3] Imine and β-Ketoenamine Tethered Fluorescent Covalent-Organic Frameworks for CO_2 Uptake and Nitroaromatic Sensing
D. Kaleeswaran, P. Vishnoi, and R. Murugavel
J. Mater. Chem. C **2015**, *3*, 7159-7171. DOI: 10.1039/c5tc00670h

147 2,6-Dimethylphenol derived H-phosphonate and α-hydroxyphosphonate: Facile synthesis, crystal chemistry, supramolecular association and metal complexation
S. Hossain, S. K. Gupta and R. Murugavel
Cryst. Eng. Comm. **2015**, *17*, 4355-4366. DOI: 10.1039/c5ce00675a

146 Is Single-4-Ring the Most Basic but Elusive Secondary Building Unit that Transforms to Larger Structures in Zinc Phosphate Chemistry?
A. A. Dar, S. K. Sharma, and R. Murugavel,
Inorg. Chem. **2015**, *54*, 4882-4894. DOI: 10.1021/acs.inorgchem.5b00495.

145 Discrete $\{Gd^{III}_4M\}$ (M = Gd^{III} or Co^{II}) pentanuclear complexes: A new class of metal-organophosphate molecular coolers,
S. K. Gupta, A. A. Dar, T. Rajeshkumar, S. Kuppuswamy, S. K. Langley, K. S. Murray, G. Rajaraman and R. Murugavel,
Dalton Trans. **2015**, *44*, 5961–5965. DOI: 10.1039/C4DT03655G

144 Ancillary ligand driven formation of discrete and polymeric cobalt organophosphates: Isolation of a hybrid cobalt phosphate three-dimensional framework exhibiting selective CO_2 capture,
S. K. Gupta, S. Kuppuswamy, J. P. S. Walsh, E. J. L. McInnes, R. Murugavel,
Dalton Trans. **2015**, *44*, 5587 – 5601. DOI: 10.1039/C4DT03379E

143 Synthetic Strategies to Further-Functionalized Monoaryl Phosphate Primary Building Units (PBUs): Crystal Structures and Solid-state Aggregation Behavior,
A. A. Dar, A. Mallick, R. Murugavel,
New J. Chem. **2015**, *39*, 1186-1195. DOI: 10.1039/c4nj01614a

142 Role of 4,4'-bipyridine versus longer spacers 4,4'-azobipyridine, 1,4-bis(4-pyridyl)ethylene, and 1,2-bis(pyridin-3-ylmethylene)hydrazine in the formation of thermally labile metallophosphate coordination polymers,
R. Howlader, P. Rajakannu, A. Ch. Kalita, R. J. Butcher, and R. Murugavel,
Inorg. Chem. Front. **2015,** *2***,** 55-66**.** DOI: 10.1039/c4qi00149d

141 Charge Transfer Aided Selective Sensing and Capture of Picric Acid by Triphenylbenzenes,
P. Vishnoi, S. Sen, G. N. Patwari and R. Murugavel,
New J. Chem. **2015**, 39, 886-892. DOI: 10.1039/C4NJ01093K

140 Isolation and characterization of nanosheets containing few layers of the Aurivillius family of oxides and metal organic compounds,
M. B. Sreedhara, B. E. Prasad, M. Moirangthem, R. Murugavel, C. N. R. Rao,
J. Solid State Chem. **2015**, 224, 21-27, DOI: 10.1016/j.jssc.2014.02.020

139 Containment of Polynitroaromatic Compounds in a Hydrogen Bonded Triarylbenzene Host,
P. Vishnoi, M. G. Walawalkar and R. Murugavel,
Cryst. Growth Des. **2014**, *14*, 5668–5673. DOI: 10.1021/cg500948h

138 An anionic two-dimensional indium carboxylate framework derived from a pseudo C_3-symmetric semi-flexible tricarboxylic acid,
P. Vishnoi, A. C. Kalita and R. Murugavel,
J. Chem. Sci. **2014**, 126, 1385-1391. DOI: 10.1007/s12039-014-0630-z

137 Auxiliary ligand aided tuning of aggregation in transition metal benzoates: Isolation of four different types of coordination polymers,
S. Banerjee, P. Rajakannu, R. J. Butcher and R. Murugavel,
Cryst. Eng. Commun. **2014**, *16*, 8429-8441. DOI**:** 10.1039/C4CE01043D

136 Ab Initio Chemical Synthesis of Designer Metal Phosphate Frame-works at Ambient Conditions,
A. Kalita, N. Gogoi, R. Jangir, S. Kuppuswamy, M. G. Walawalkar and R. Murugavel,
Inorg. Chem. **2014**, *53*, 8959-8969. DOI: 10.1021/ic500810d

135 A flexible tri-carboxylic acid derived zinc (II) 3-D helical metal-organic-framework and a cadmium (II) interwoven 2-D layered framework solids,
P. Vishnoi and R. Murugavel,
Z. Anorg. Allg. Chem. **2014**, *640,* 1075-1080*.* DOI: 10.1002/zaac.201300677

134 Selective Fluorescence Sensing of Polynitroaromatic Explosives by Triaminophenylbenzene Scaffolds,
P. Vishnoi, M. G. Walawalkar, S. Sen, A. Datta, G. Naresh Patwari and R. Murugavel,
Phys. Chem. Chem. Phys. **2014**, 16, 10651-10658. DOI: 10.1039/c4cp00930d.

133 Fluoride Ion Sensing and Caging by a Preformed Molecular D4R Zinc Phosphate Heterocubane,

A. Ch. Kalita and R. Murugavel,
Inorg. Chem. **2014**, *53*, 3345-3353. DOI: 10.1021/IC500193N

132 Polymeric and cyclic manganese phosphates and phosphinates: synthesis, spectral characterization and solid-state structures,
R. Pothiraja, P. Rajakannu, P. Vishnoi, R. J. Butcher and R. Murugavel,
Inorg. Chim. Acta, **2014**, *414*, 264–273. DOI: 10.1016/j.ica.2014.01.038

131 Organotitanium phosphates with free P-OH groups: Synthesis, spectroscopy and solid state structures,
L. Kalita, A. Ch. Kalita and R. Murugavel,
J. Organomet. Chem. **2014**, *751*, 555-562. DOI: 10.1016/j.jorganchem.2013.07.053

130 Pseudopolymorphism leading and two different supramolecular aggregations in a phosphate monoester: role of a rare water-dimer,
A. Ch. Kalita, K. Sharma, R. Murugavel,
Cryst. Eng. Comm. **2014**, *16*, 51-55. DOI: 10.1039/C3CE40912K

129 Mono and dinuclear group 12 phosphonates derived from a sterically encumbered phosphonic acid: Observation of esterification,
R. Howlader, M. G. Walawalkar and R. Murugavel,
Inorg. Chim. Acta, **2013**, *405*, 147-154. DOI: 10.1016/j.ica.2013.05.011

128 Non-covalently aggregated zinc and cadmium complexes derived from substituted aromatic carboxylic acids: Synthesis, spectroscopy and structural studies,
N. Palanisami, P. Rajakannu and R. Murugavel,
Inorg. Chim. Acta, **2013,** *405*, 522-531. DOI: 10.1016/j.ica.2013.04.021

127 Cationic D4R zinc phosphate–anionic polyoxometalate hybrids: synthesis, spectra, structure and catalytic studies,
A. Ch. Kalita, C. Roch-Marchal and R. Murugavel,
Dalton Trans. **2013,** *42*, 9755-9763. DOI: 10.1039/c3dt50786f

126 Secondary Building Units and Framework Structures in Aluminum and Zinc Phosphates: The Connection in Between, R. Murugavel and C. N. R. Rao, in
"**Metal Phosphonate Chemistry: From Synthesis to Applications**", Edited by A. Clearfield, K. Demadis, Royal Society of Chemistry, **2012**, pp 344-363 (BOOK CHAPTER).
DOI:10.1039/9781849733571-00344

125 Cyclopentadiene Based Low-Valent Group 13 Metal Compounds: Ligands in Coordination Chemistry and Link between Metal Rich Molecules and Intermetallic Materials,
S. González-Gallardo, T. Bollermann, R. A. Fischer and R. Murugavel,
Chem. Rev. **2012**, *112*, 3136–3170. DOI: 10.1021/cr2001146

124 Synthesis and Molecular Structures of Carboxylic Acid Group Bearing Two Ketoimines that Exist in Enaminone Form.
R. Murugavel, M. P. Singh and M. Nethaji.
J. Chem. Cryst. **2012**, *42*, 12-17. DOI: 10.1007/s10870-011-0184-6

123 Synthesis and structural characterization of dinuclear complexes of trivalent aluminum, gallium, indium and chromium derived from pyrazole-2-ethanol),
L. Kalita, M. G. Walawalkar and R. Murugavel,
Inorg. Chim. Acta **2011**, *377,*105-110. DOI: 10.1016/j.ica.2011.07.047

122 Reactions of $[(Me_3Si)_3CAlMe_2]$ with substituted benzoic acids. Isolation of a rare organoalumoxane carboxylate,
L. Kalita, R. Pothiraja, V. Saraf, M. G. Walawalkar, R. J. Butcher, R. Murugavel,
J. Organomet. Chem. **2011**, *696*, 3155-3161. DOI: 10.1016/j.jorganchem.2011.06.024

121 Supramolecular aggregation in alkaline earth metal 3- and 4-hydroxybenzoates using 1,10-phenanthroline auxiliary,
R. Korah, L. Kalita and R. Murugavel,
Ind. J. Chem. **2011**, *50A*, 763-774.

120 Copper phosphates and phosphinates with pyridine / pyrazole alcohol co-ligands: Synthesis and structure,
R. Pothiraja, M. Sathiyendiran, A. Steiner and R. Murugavel**,**
Inorg. Chim. Acta, **2011**, *372*, 347-352. DOI: 10.1016/j.ica.2011.03.063

119 Synthesis, Spectral Characterization and Single Crystal X-ray Structures of a Series of Manganese-2,2'-bipyridine Complexes Derived from Substituted Aromatic Carboxylic Acids.
N. Palanisami and R. Murugavel,
Inorg. Chim. Acta **2011**, *365*, 430-438. DOI: 10.1016/j.ica.2010.09.040

118 Assembling Discrete D4R Zeolite SBUs through Non-Covalent Interactions. Part 3: Mediation by Butanols and 1,2-bis(dimethylamino)ethane,
R. Murugavel, S. Kuppuswamy, N. Gogoi and A. Steiner,
Inorg. Chem. **2010**, *49*, 2153-2162. DOI: 10.1021/ic901932r

117 Non-covalent Synthesis of Hierarchical Zinc Phosphates from a Single $Zn_4O_{12}P_4$ Double-Four-Ring Building Block: Dimensionality Control through the Choice of Ancillary Ligands.
R. Murugavel, S. Kuppuswamy, N. Gogoi, R. Boomishankar and A. Steiner,
Chem. Euro. J. **2010**, 16, 994-1009.

116 Three-dimensional sodium phosphinates derived from a bis-functionalized phosphinic acid,
R. Murugavel, S. Shanmugan and N. Gogoi,
Inorg. Chem. Commun**. 2010**, *13*, 1530-1533. DOI: 10.1016/j.inoche.2010.09.004

115 A Hexanuclear Iron(III) Complex, $[Fe_6O_2(OH)_2(PhCOO)_{10}(hedmp)_2]\cdot 3CH_3CN$, Assembled from 2-Hydroxyethyl-3,5-dimethyl pyrazole,
R. Murugavel, N. Gogoi and R. Clérac,
Inorg. Chim. Acta **2010**, *363*, 3004-3009. DOI: 10.1016/j.ica.2010.03.034

114 One, Two and Three Methylene Phosphonic Acid Groups ($-CH_2PO_3H_2$) on a Mesitylene Ring: Synthesis, Characterization and Aspects of Supramolecular Aggregation,
R. Murugavel and M. P. Singh,
New. J. Chem. **2010**, *34*, 1846-1854. DOI: 10.1039/B9NJ00691E

113 Rings, chains and cages in metal phosphate chemistry: The interdependence and possible interconversion between various structural forms,
R. Murugavel and N. Gogoi,
J. Organomet. Chem. **2010**, *695*, 916-924. DOI: 10.1016/j.jorganchem.2009.10.046

112 Structural variations in layered alkaline earth metal cyclohexyl phosphonates,
R. Murugavel and N. Gogoi,
Bull. Mater. Sci. **2009**, *32*, 321-328. DOI: 10.1007/s12034-009-0046-4

111 Nuclearity Control in Molecular Iron Phosphates through Choice of Iron Precursors and Ancillary Ligands,
R. Murugavel and N. Gogoi,
Chem. Asian. J. **2009,** *4,* 923-935. DOI: 10.1002/asia.200800474

110 Solving Zeolite Jigsaw through Coordination Chemistry,
R. Murugavel and M. P. Singh in
Insights into Coordination, Bioinorganic and Applied Inorganic Chemistry*,*
Edited by M. Melník, P. Segľa, M. Tatarko, Press of Slovak University of Technology, Bratislava, **2009**, pp. 211-220. DOI: 10.1002/chin.201030229

109 Conformational and Isomeric Preferences of Six-membered Inorganic Heterocycles $[EtNP(E)(OR)]_3$ (E = l.p., O, S, or Se): A Synthetic, Spectroscopic, Structural and Computational Study,
R. Murugavel, G. Prabusankar, R. J. Butcher, A. Sharma and R. B. Sunoj,
Inorg. Chem. **2009**, *48*, 2048-2059. DOI: 10.1021/ic801945q

108 Tetra- and Decanuclear Iron(III) Phosphonates: Observance of a Rare P−C Bond Cleavage in a Homogeneous Medium**,**
R. Murugavel, N. Gogoi and R. Clérac,
Inorg. Chem. **2009**, *48*, 646-651**.** DOI: 10.1021/ic8017562

107 Di-, Tri-, Tetra- and Hexanuclear Copper(II)-Monoorganophosphates: Structure and Nuclearity Dependence on the Choice of Phosphorus Substituents and Auxiliary N-Donor Ligands,
R. Murugavel, S. Kuppuswamy, A. N. Maity and M. P. Singh,

***Inorg. Chem*. 2009,** *48*, 183-192. DOI: 10.1021/ic801532y

106 Controlling the structure of Mn(II) phosphates by the choice and ratio of organo-phosphate and auxiliary ligands,
R. Murugavel, S. Kuppuswamy, N. Gogoi, A. Steiner, J. Bacsa, R. Boomishankar and K. G. Suresh,
***Chem. Asian. J.* 2009,** *4*,143-153. DOI: 10.1002/asia.200800317

105 Assembling metal phosphonates in the presence of monodentate-terminal and bidentate-bridging pyridine ligands. Use of non-covalent and covalent-coordinate interactions to build polymeric metal-phosphonate architectures,
R. Murugavel and S. Shanmugan,
***Dalton Trans.* 2008,** 5358 - 5367. DOI: 10.1039/b805848b

104 Metal Complexes of Organophosphate Esters and Open-framework Metal Phosphates: Synthesis, Structure, Transformations and Applications,
R. Murugavel, A. Choudhury, M. G. Walawalkar, R. Pothiraja and C. N. R. Rao,
***Chem. Rev*. 2008**, *108,* 3549-3655. DOI: 10.1021/cr000119q

103 Microwave Assisted Solid-State Synthesis of Functional Organotin Carboxylates from Sterically Encumbered 3,5-Di-*tert*-butylsalicylic Acid,
R. Murugavel and N. Gogoi,
J. Organomet. Chem*. 2008**, *693,** 3111-3116**.** DOI: 10.1016/j.jorganchem.2008.04.001

102 Organic Soluble Tri-, Tetra- and Pentameric Titanium(IV) Phosphate Cage Compounds Derived from Bulky Monoaryl Esters of Phosphoric Acid,
R. Murugavel and S. Kuppuswamy,
Inorg. Chem.* 2008,** *47,** 7686-7694. DOI: 10.1021/ic800675n

101 Cooperative Binding of Phosphate Anion and Neutral N-Donor to Alkaline Earth Metal Ions. Investigation of Group 2 Metal – Organophosphate Interaction in the Absence and Presence of 1,10-Phenanthroline, R. Murugavel,
S. Kuppuswamy and S. Randoll,
***Inorg. Chem.* 2008,** *47,* 6028-6039. DOI: 10.1021/ic8003239

100 Asymmetric Pentameric and Tetrameric Organooxotin clusters: Insights into Their Formation through Partial Dearylation,
R. Murugavel and S. Shanmugan,
Organometallics* 2008,** *27,** 2784-2788. DOI: 10.1021/om800162s

99 Water in Organoaluminum Chemistry!: Formation of *Three-in-One* Alumino Phosphate Clusters that Incorporate Bohemite Repeating Units,
R. Murugavel and S. Kuppuswamy,
***Chem*. *Euro. J.* 2008**, *14,* 3869-3873. DOI: 10.1002/chem.200800320

98 Structural Diversity in Zinc Phosphates and Phosphinates: Observation of a Lattice Water Dimer Sandwiched Between Phosphoryl Oxygen Atoms,
R. Pothiraja, S. Shanmugan, M. G. Walawalkar, M. Nethaji, R. J. Butcher and R. Murugavel,
Eur. J. Inorg. Chem. **2008**, 1834-1845. DOI: 10.1002/ejic.200701062

97 Structural Diversity in Organotin Compounds Derived from Bulky Monoaryl Phosphates: Dimeric, Tetrameric and Polymeric Tin Phosphate Complexes,
R. Murugavel, S. Shanmugan and S. Kuppuswamy,
Eur. J. Inorg. Chem. **2008**, 1508-1517. DOI: 10.1002/ejic.200701032

96 Facile one-pot synthesis of functionalized organophosphonate esters via ketone insertion into bulky arylphosphites,
R. Murugavel and S. Kuppuswamy,
J. Chem. Sci. **2008**, *120*, 131-136. DOI: 10.1007/s12039-008-0015-2

95 Structural Diversity and Supramolecular Aggregation in Calcium, Strontium and Barium Salicylates Incorporating 1,10-Phenanthroline and 4,4'-bipyridine: Probing the Softer Side of Group 2 Metal Ions with Pyridinic Ligands,
R. Murugavel and R. Korah,
Inorg. Chem. **2007**, *46,* 11408-11062. DOI: 10.1021/ic700977w

94 Supramolecular Aggregation in Alkaline Earth Metal Amino Benzoates with 1,10-phenanthroline Auxiliary,
R. Murugavel and R. Korah,
Synthesis and Reactivity in Inorganic, Metal-Organic and Nano-Metal Chemistry **2007,** 37, 779-795. DOI: 10.1080/15533170701740925

93 A Double Helix Is the Repeating Unit in a Luminescent Calcium 5-Aminoisophthalate Supramolecular Edifice with Water-Filled Hexagonal Channels,
R. Murugavel, P. Kumar, M. G. Walawalkar and R. Mathialagan,
Inorg. Chem. **2007**, *46*, 6828-6830. DOI: 10.1021/ic070113k

92 Unusual reactivity of a sterically hindered diphosphazane ligand, $EtN\{P(OR)_2\}_2$, (R = $C_6H_3(i\text{Pr})_2$-2,6) towards (μ^3-allyl)palladium precursors,
H. Krishna, S. S. Krishnamurthy, M. Nethaji, R. Murugavel and G. Prabusankar,
Dalton Trans. **2007**, 2908-2914. DOI: 10.1039/B703308G

91 Synthesis, magnetic behaviour and X-ray structures of dinuclear copper complexes with multiple bridges. Efficient and selective catalysts for polymerization of 2,6-dimethylphenol.
R. Murugavel, R. Pothiraja, N. Gogoi, R. Clerac, L. Lecren, R. J. Butcher, M. Nethaji,
Dalton Trans. **2007**, 2405-2410. DOI: 10.1039/B618559B

90 Cobalt-5-aminoisophthalate: $[Co(AIPA)(OH_2)_2]_n.nH_2O$: a new one-dimensional rail-road polymer with occluded water molecules.
S. Banerjee, S. Shanmugan, R. Murugavel,
Structural Chemistry **2007**, *18*, 165-169. DOI: 10.1007/s11224-006-9081-6

89 First organotin complex of a phosphonic diamide $RP(O)(NHR)_2$,
R. Murugavel, R. Pothiraja, S. Shanmugan, N. Singh, R. J. Butcher,
J. Organomet. Chem. **2007**, *692*, 1920-1923. DOI: 10.1016/j.jorganchem.2006.12.044

88 Seeking tetrameric transition metal phosphonate with a D4R core and organising it into a 3-D supramolecular assembly,
R. Murugavel, S. Shanmugan,
Chem. Commun. **2007**, 1257-1259. DOI: 10.1039/B616439K

87 A Novel Layered Copper Phosphoramidate which Contains Six-membered Rings Made of Five Different Elements.
R. Murugavel and M. P. Singh,
Inorg. Chem. **2006**, *45*, 9154-9156. DOI: 10.1021/ic061298i

86 Octameric and decameric aluminophosphates,
R. Murugavel and S. Kuppuswamy,
Angew. Chem., Int. Ed. **2006**, *45*, 7022-7026. DOI: 10.1002/anie.200601979

85 A Novel Dimeric Copper Salicylate with an Undissociated COOH Group: Synthesis and Crystal Structure of $[Cu_2(Sal)(HSal)(2,2'\text{-}bpy)_2](ClO_4)$,
N. Palanisami, G. Prabusankar and R. Murugavel,
Inorg. Chem. Commun. **2006**, *9*, 1002-1006. DOI: 10.1016/j.inoche.2006.05.025

84 Hierarchical Structures Built from a Molecular Zinc Phosphate Core,
R. Murugavel, S. Kuppuswamy, R. Boomishankar and A. Steiner,
Angew. Chem., Int. Ed. **2006**, *45*, 5536-5540. DOI: 10.1002/anie.200601704

83 Synthesis and Spectral Characterization of Diorganodiaminosilanes $[(ArNH)_2SiPhMe]$ (Ar = 2,6-$iPr_2C_6H_3$; 2,4,6-$Me_3C_6H_2$) and Lithium Silylamide $[(2,6\text{-}Et_2C_6H_3NLi)(2,6\text{-}Et_2C_6H_3NH)SiPh_2]$,
N. Palanisami and R. Murugavel,
J. Organomet. Chem. **2006**, *691*, 3260-3266. DOI: 10.1016/j.jorganchem.2006.03.039

82 Sterically encumbered acyclic diphosphazanes: synthesis, conformations and coordination behavior**,**
G. Prabusankar, N. Palanisami, R. Murugavel and R. J. Butcher,
Dalton Trans**. 2006,** 2140-2146**.** DOI: **10.1039/B516316A**

81 First Examples of Metal Cyclohexylphosphonates: Influence of the Choice of Synthetic Route on the Product,

R. Murugavel, P. Davis and M. G. Walawalkar,
Z. Anorg. Allg. Chem. **2005**, *631*, 2806-2811. DOI: 10.1002/zaac.200500156

80 Recent developments in the chemistry of molecular titanosiloxanes and titanophosphonates.
P. Davis and R. Murugavel,
Synthesis and Reactivity in Inorganic, Metal-Organic and Nano-Metal Chemistry **2005**, *35*, 591-622. DOI: 10.1080/15533170500225540

79 Non-Interpenetrating Transition Metal Diorganophosphate 2-Dimensional Rectangular Grids from Their 1-Dimensional Wires: Structural Transformations under Mild Conditions.
R. Pothiraja, M. Sathiyendiran, R. J. Butcher and R. Murugavel,
Inorg. Chem. **2005**, *44*, 6314-6323. DOI: 10.1021/ic050742z

78 Synthesis, Spectral Studies and Structural Characterization of a New Organosilanetriol, its Amine Complexes and a Surface Lewis Basic Cubic Aluminosilicate.
G. Prabusankar, R. Murugavel and R. J. Butcher,
Organometallics **2005**, *24*, 2124-2128. DOI: 10.1021/om049254+

77 Cobalt and Manganese Nets via their Wires Facile Transformation in Metal-Diorganophosphates,
R. Pothiraja, M. Sathiyendiran, R. Murugavel and R. J. Butcher.
Inorg. Chem. **2004**, *43*, 7585-7587. DOI: 10.1021/ic048781i

76 Hexameric Organotincarboxylates with Cyclic and Drum Structures,
G. Prabusankar and R. Murugavel,
Organometallics **2004**, *23*, 5644-5647. DOI: 10.1021/om049584u

75 Transformations of Molecules and SBUs to Materials: A Bottom-up Approach,
R. Murugavel, M. G. Walawalkar, M. Dan, H. W. Roesky and C. N. R. Rao,
Acc. Chem. Res. **2004**, *37*, 763-774. DOI: 10.1021/ar040083e

74 ATP Synthase and the Torsional Mechanism: Resolving a 50-Yeal-Old Mystery,
S. Jain, R. Murugavel and L. D. Hansen,
Curr. Sci. **2004**, *87*, 16-19.

73 Polyhedral Ferrous and Feric Siloxanes,
U. N. Nehete, G. Anantharaman, V. Chandrasekhar, R. Murugavel, M. G. Walawalkar, H. W. Roesky, D. Vidovic, J. Magull, K. Samwer and B. Sass,
Angew. Chem., Int. Ed. **2004**, *43*, 3832-3835. DOI: 10.1002/anie.200453740

72 Formation of One-Dimensional Water inside a Organic Solid: Supramolecular Architectures Derived by the Interaction of Aminobenzoic Acids with Nitrogen Bases and H_2SO_4,
S. Banerjee and R. Murugavel,
Cryst. Growth Des. **2004**, *4*, 545-552. DOI: 10.1021/cg034229c

71 Stabilization of Organosilanetriols in Amine Matrices: Trapping Intermediates between $RSi(OH)_3$ and $(RSiO_3)_3^-$ Anions, G. Prabusankar,
R. Murugavel, and R. J. Butcher,
***Organometallics* 2004**, *23*, 2305-2314. DOI: 10.1021/om0499299

70 Monomeric, Tetrameric, and Polymeric Copper Di-tert-butyl Phosphate Complexes Containing Pyridine Ancillary Ligands**,**
R. Murugavel, M. Sathiyendiran, R. Pothiraja, M. G. Walawalkar, T. Mallah and E. Riviére,
***Inorg. Chem.* 2004,** *43*, 945-953. DOI: 10.1021/ic0349508

69 Stabilization of p-block organoelement terminal hydroxides, thiols and selenols require newer synthetic strategies.
H. W. Roesky, R. Murugavel and M.G. Walawalkar.
***Chem. Euro. J.* 2004**, *10*, 324-331. DOI: 10.1002/chem.200305274

68 O-H Bond Elongation in Coordinated Water Through Intramoleclar Hydrogen Bonding: Snap-shots in Phosphate Ester Hydrolysis,
R. Murugavel, M. Sathiyendiran, R. Pothiraja and R. J. Butcher,
***Chem. Commun.* 2003**, 2546-2547. DOI: 10.1039/B306038A

67 A nanoscopic molecular cadmium phosphonate wrapped in a hydrcarbon sheath,
G. Anantharaman, M.G. Walawalkar, R. Murugavel, B. Gabor, R. Herbst-Irmer, M. Baldus, B. Angerstein, H. W. Roesky,
***Angew. Chem. Int. Ed.* 2003**, *42*, 4482-4485. DOI: 10.1002/anie.200352133

66 Reactions of 1,3,5-Benzenetricarboxylic acid with Zn(II) ion in the presence of added amines: Isolation and structure determination of zinc coordination polymers with tetrahedral and octahedral zinc centres,
D. Krishnamurthy and R. Murugavel,
***Ind. J. Chem*. 2003**, *42A*, 2277-2282.

65 Reactivity Studies, Structural Characterization and Thermolysis of Cubic Titanosiloxanes. Precursors to Titanosilicate Materials which Catalyze Olefin Epoxidation,
R. Murugavel, P. Davis and V. S. Shete,
***Inorg. Chem.* 2003**, *42*, 4696-4706. DOI: 10.1021/ic034317m

64 Synthesis, characterization and structures of diphenyldiaminosilanes bearing bulky substituents on nitrogen,
R. Murugavel, N. Palanisami and R. J. Butcher,
***J. Organomet. Chem.* 2003**, *675*, 65-71. DOI: 10.1016/S0022-328X(03)00233-X

63 Synthesis, Spectral Characterization and Crystal Structures of Organophosphonic Diamides: Pyramidal Nitrogen Centers and Hydrogen Bonding in $[PhP(O)(NHtBu)_2]$, $[PhP(O)(NHDipp)_2]$ (Dipp = 2,6-*i*Pr2C_6H_3) and $[tBuP(O)(NHiPr)_2]$,
R. Murugavel and R. Pothiraja,
New. J. Chem. **2003**, *27*, 968-974. DOI: 10.1039/B300035D

62 First alkaline earth metal 3-aminobenzoate (3-aba) complex: 1-D polymeric $[Ca(3\text{-aba})_2(H_2O)_2]_n$ assembly,
R. Murugavel and S. Banerjee,
Inorg. Chem. Commun. **2003**, *6*, 810-814. DOI: 10.1016/S1387-7003(03)00112-6

61 Di-*tert*-butylphosphate as Synthon for Metal Phosphate Materials via Single-Source Coordination Polymers $[M(dtbp)_2]_n$ (M = Mn, Cu) and $[Cd(dtbp)_2(H_2O)]_n$ (dtbp-H = $(tBuO)_2P(O)OH$),
M. Sathiyendiran and R. Murugavel,
Inorg. Chem. **2002**, *41*, 6404-6411. DOI: 10.1021/ic0259787

60 Anionic Metal-Organic and Cationic Organic Layer Alternation in the Coordination Polymers $[M(BTEC)(OH_2)_4]_n.n(C_4H_{12}N_2).4nH_2O$ (M = Co, Ni, or Zn; BTEC = 1,2,4,5-Benzenetetra-carboxylate), R. Murugavel, D. Krishnamurthy and M. Sathiyendiran, ***J. Chem. Soc., Dalton Trans.*** **2002**, 34-39. DOI: 10.1039/B105687P

59 Some recent developments in Titanium Alkoxide Chemistry,
R. Murugavel and P. Davis,
Titanium **2001**, *6*, 16.

58 Reactions of 2-Mercaptobenzoic acid with Divalent Alkaline Earth Metal Ions: Synthesis, Spectral Studies and Single Crystal X-ray Structures of Calcium, Strontium and Barium Complexes of 2,2'-Dithio-(bisbenzoic acid).
R. Murugavel, K. Baheti and G. Anantharaman.
Inorg. Chem. **2001**, *40*, 6870-6878. DOI: 10.1021/ic010519b

57 Metal Containing New Inorganic Ring Systems Based on Siloxane and Phosphazane Frameworks.
R. Murugavel, G. Prabusankar, V.S. Shete and K. Baheti.
Phosphorus, Sulfur, Silicon, **2001**, *168*, 263-268. DOI:10.1080/10426500108546565

56 Synthesis and characterization of new (chloro)aminosilanes: X-ray crystal structure of $[(2,6\text{-}Me_2\text{-}C_6H_3NH)_2SiCl_2]$.
M. G. Walawalkar and R. Murugavel,
Phosphorus, Sulfur, Silicon **2001**, *174*, 229-238. DOI:10.1080/10426500108040247

55 Synthesis of polyferromethylsiloxane Sorbents Using a Sol-Gel Method,

Y. U. Zub, H. W. Roesky, M. M. Malyar, A. A. Chuiko, M. Jaroniec, R. Murugavel,
Solid State Sciences **2001**, *3*, 169–182. DOI: 10.1016/S1293-2558(00)01124-9

54 Synthesis and Structure of a Novel Lithium Gallosiloxane Containing a Ga4Si4O8 Macrocycle Analogous to the S8R Building Unit of Zeolites,
R. Murugavel, M.G. Walawalkar, G. Prabusankar & P. Davis.
Organometallics **2001**, *20,* 2639-2642***.*** DOI: 10.1021/om0100636

53 A novel cyclic titanosiloxane derived from $[Ph_2Si(OH)_2]_2O$: Synthesis and crystal structure of $[CpTi(Cl)\{O(SiPh_2O)_2SiPh_2O\}]$,
R. Murugavel, V. S. Shete, K. Baheti and P. Davis,
J. Organomet. Chem. **2001**, *625*, 195-199*.* DOI: 10.1016/S0022-328X(00)00946-3

52 Is Water a Friend or Foe in Organometallic Chemistry? The Case of Group 13 Organometallic Compounds,
M. G. Walawalkar, H. W. Roesky and R. Murugavel.
Acc. Chem. Res. **2001**, *32*, 201-211*.* DOI: 10.1021/ar0001158

51 Organic Soluble Silicophosphonate $[RSi(OH)\{OP(O)(H)(OH)\}]_2O$ (R = (2,6-*i*-$Pr_2C_6H_3$)$NSiMe_3$): The First Silicophosphonate Containing Free Si−OH and P−OH Groups,
R. Murugavel, G. Prabusankar, and M. G. Walawalkar,
Inorg. Chem. **2001**, *40*, 1084-1085. DOI: 10.1021/ic000960m

50 Di-tert-butylphosphate Complexes of Co(II) and Zn(II) as Precursors for Ceramic $M(PO_3)_2$ and $M_2P_2O_7$ Materials: Synthesis, Spectral Characterization, Structural Studies and Role of Auxiliary Ligands,
R. Murugavel, M. Sathiyendiran and M. G. Walawalkar.
Inorg. Chem. **2001**, *40*, 427-434. DOI: 10.1021/ic0006100

49 Di-*tert*-butylphosphate Complexes of Mn(II) and Cu(II) as Single-Source Precursors for Metal Phosphate Materials.
R. Murugavel and M. Sathiyendiran,
Chem. Lett. **2001**, 84-85*.* DOI: 10.1246/cl.2001.84

48 Synthetic, spectroscopic and structural studies on 4-aminobenzoate complexes of divalent alkaline earth metals: X-ray crystal structures of $[\{Mg(H_2O)_6\}(4\text{-aba})_2].2H_2O$ and $[Ca(4\text{-aba})_2(H_2O)_2]$.
R. Murugavel, V. V. Karambelkar and G. Anantharaman,
Indian J. Chem. (Section A) **2000**, *39*, 843-850.

47 Coordination Polymers of Divalent Metal Ions Based on 1,2,4,5-Benzentetrapolycarboxylic Acid: Synthesis and Structure.
D. Krishnamurthy, M. Sathiyendiran and R. Murugavel,
Proc. Ind. Acad. Sci. (Chem. Sci.) **2000**, *112*, 395.

46 Bulky Aryloxo Organotitanium Chlorides.
G. Anantharaman, K. Baheti and R. Murugavel,
***Proc. Ind. Acad. Sci*. *(Chem. Sci.)* 2000**, *112*, 373.

45 Extended Metal Organic Solids Based on Benzenepolycarboxylic and Aminobenzoic Acids.
R. Murugavel, G. Anantharaman, D. Krishnamurthy, M. Sathiyendiran and M. G. Walawalkar.
***Proc. Ind. Acad. Sci. (Chem. Sci.)* 2000**, *112*, 273-290. DOI: 10.1007/BF02706178

44 Synthesis, Spectral Characterization and Structural Studies on 2-Aminobenzoate Complexes of Divalent Alkaline Earth Metal Ions: X-ray Crystal Structures of $[Ca(2\text{-}aba)_2(OH_2)_3]_\infty$, $[\{Sr(2\text{-}aba)_2(OH_2)_2\}H_2O]_\infty$ and $[Ba(2\text{-}aba)_2(OH_2)]_\infty$ (2-abaH = $2\text{-}NH_2C_6H_4COOH$).
R. Murugavel, V. V. Karambelkar, G. Anantharaman and M. G. Walawalkar.
***Inorg. Chem*. 2000**, *39*, 1381-1390. DOI: 10.1021/ic990895k

43 Synthesis and structure of a novel terminal imido complex of titanium.
B.R. Jagirdar, R. Murugavel, H.-G. Schmidt,
***Inorg. Chim. Acta* 1999**, *292*, 105-107. DOI: 10.1016/S0020-1693(99)00092-4

42 Molecular Titanosiloxanes as Model Compounds and Precursors for Titanosilicate Materials.
R. Murugavel,
In ***Advances in Metallo-Organic Chemistry* 1999**, pp. 77-88 (Ed. R. Bohra), RBSA Publishers.

41 Monovalent Group 13 Organometallic Compounds: Weakly Associated to Monomeric, Versatile Two-Electron Donors.
R. Murugavel and V. Chandrasekhar,
***Angew. Chem*. 1999**, *111*, 1289-1297; ***Angew. Chem., Int. Ed.* 1999**, *38*, 1211-1215.
DOI: 10.1002/(SICI)1521-3773(19990503)38:9<1211::AID-ANIE1211>3.0.CO;2-O

40 Molecular Phosphonate Cages: Model Compounds and Starting Materials for Phosphate Materials,
M. G. Walawalkar, H. W. Roesky and R. Murugavel,
***Acc. Chem. Res*. 1999**, *32*, 117-126. DOI: 10.1021/ar980040w

39 Conversion of Alkyltantalum Chlorides to Flurodes Using Me_3SnF as Fluorinating Agnet. Crystal Structures of $(p\text{-}MeC_6H_4CH_2)_3TaF_2$, $(Me_3SnCl.Me_3SnF.TaF_5)_n$, $(Me_3Si)_2CHTaCl_4$, $\{(Me_3Si)_2CHTaCl_4.\text{-}[(Me_3Si)_2CH]_2Ta_2Cl_6(\mu_2\text{-}O)\}$ and $(Me_3Si)_2CHTaF_4$,
O. I. Guzyr, M. Schormann, J. Schimkowiak, H. W. Roesky, C. Lehmann, M. G. Walawalkar, R. Murugavel, H.-G. Schmidt and M. Noltemeyer,
***Organometallics* 1999**, *18*, 832-836. DOI: 10.1021/om980768g

38 Reaction of Trialkyl Phosphates with Trialkyls of Aluminum and Gallium. New Route to Alumino- and Gallophosphate Compounds via Dealkylsilylation.
J. Pinkas, D. Chakraborty, Y. Yang, R. Murugavel, M. Noltemeyer and H. W. Roesky,

***Organometallics* 1999**, *18*, 523-528. DOI: 10.1021/om9806702

37 Organosilanetriols: Model Compounds and Potential Precursors for Metal-Containing Silicate Assemblies,
R. Murugavel, M. Bhattacharjee and H. W. Roesky,
***Appl. Organomet. Chem.* 1999**, *13*, 227-243. DOI: 10.1002/(SICI)1099-0739(199904)13:4<227::AID-AOC842>3.0.CO;2-0

36 Gallophosphonates Containing Alkali Metal Ions. 2: Synthesis and Structure of Gallophosphonates Incorporating Na^+ and K^+ ions,
M. G. Walawalkar, R. Murugavel, H. W. Roesky, I. Uson and R. Kraetzner,
***Inorg. Chem*. 1998**, *37*, 473-478. DOI: 10.1021/ic971441v

35 Silanetriols: Preparation and Their Reactions,
R. Murugavel, M. G. Walawalkar, A. Voigt and H. W. Roesky,
in ***Organosilicon Chemistry III - From Molecules to Materials***. (Eds.: N. Auner and J. Weis), VCH, Weinheim, **1998**. pp. 376-394. DOI: 10.1002/9783527619900.ch63

34 Novel Organic-Soluble Molecular Titanophosphonates with Cage Structures Comparable to Titanium Containing Silicates,
M. G. Walawalkar, S. Horchler, S. Dietrich, D. Chakraborty, H. W. Roesky, M. Schaefer, H.-G. Schmidt, G. M. Sheldrick & R. Murugavel,
***Organometallics* 1998**, *17*, 2865-2868. DOI: 10.1021/om971045k

33 Synthesis and Reactivity of Cyclopentadienyl-Free Organolanthanides.
S. A. A. Shah, R. Murugavel, H. W. Roesky and H.-G. Schmidt,
***Bull. Polish. Acad. Sci. Chem.* 1998**, *46*, 157-166.

32 Organometallic Fluorides: Compounds Containing Carbon-Metal-Fluorine Fragments of d-Block Elements,
E. F. Murphy, R. Murugavel and H. W. Roesky,
***Chem. Rev*. 1997**, *97*, 3425-3468. DOI: 10.1021/cr960365v

31 Syntheses, Spectroscopy and Crystal Structures of New Group 4 Metallasiloxanes,
A. Voigt, R. Murugavel, H. W. Roesky and H.-G. Schmidt,
***J. Mol. Struct.* 1997**, *436/437*, 49-57. DOI: 10.1016/S0022-2860(97)00222-6

30 Organic-Soluble Neutral and Ionic Indium Siloxane Cages: Potential Precursors for Indium Containing Silicates,
A. Voigt, M. G. Walawalkar, R. Murugavel, H. W. Roesky, E. Parisini and P. Lubini,
***Angew. Chem*. 1997**, *109*, 2313-2315; ***Angew. Chem., Int. Ed. Engl*. 1997**, *36*, 2203-2205. DOI: 10.1002/anie.199722031

29 Soluble Molecular Titanosilicates,

A. Voigt, R. Murugavel, M. L. Montero, H. Wesel, F.-Q. Liu, H. W. Roesky, I. Usón, T. Albers and E. Parisini,
Angew. Chem. **1997**, *109*, 1020-1022; ***Angew. Chem., Int. Ed. Engl***. **1997**, *36*, 1001-1003. DOI: 10.1002/anie.199710011

28 Titanosilicates: Recent Developments in Synthesis and Use as Oxidation Catalysts,
R. Murugavel and H. W. Roesky,
Angew. Chem. **1997**, *109*, 491-494; ***Angew. Chem., Int. Ed. Engl***. **1997**, *36*, 477-479. DOI: 10.1002/anie.199704771

27 The Role of 2,4,6-Tris(trifluoromethyl)phenylamino Group in Stabilizing New Phosphorus, Arsenic and Germanium Containing Main Group Compounds and Transition Metal Derivatives.
J.-T. Ahlemann, H. W. Roesky, R. Murugavel, E. Parisini, M. Noltemeyer, H.-G. Schmidt, O. Müller, R. Herbst-Irmer, L. N. Markovskii and Y. G. Shermolovich,
Chem. Ber. **1997**, *130*, 1113-1121. DOI: 10.1002/cber.19971300813

26 Syntheses, Spectroscopy, Structures and Reactivity of Neutral Group 13 Molecular Phosphonates.
M.G. Walawalkar, R. Murugavel, H. W. Roesky and H.-G. Schmidt,
Inorg. Chem. **1997**, *36*, 4202-4207. DOI: 10.1021/ic970346j

25 A Novel Molecular Gallium Phosphonate Cage Containing Sandwiched Lithium Ions: Synthesis, Structure and Reactivity,
M.G. Walawalkar, R. Murugavel, A. Voigt, H. W. Roesky and H.-G. Schmidt,
J. Am. Chem. Soc. **1997**, *119*, 4656-4661. DOI: 10.1021/ja964263y

24 Organometallic Chemistry of C_{60} Beyond λ^2-C=C Co-ordination: Buckminsterfullerenes as Pentahapto (λ^5) Cyclopentadienyl Ligands,
R. Murugavel,
Current Science **1997**, *72*, 231-232.

23 The First Molecular Borophosphonate Cage: Synthesis, Spectroscopy and Single Crystal X-ray Structure,
M. G. Walawalkar, R. Murugavel, H. W. Roesky and H.-G. Schmidt,
Organometallics **1997**, *16*, 516-518. DOI: 10.1021/om960995n

22 Stannasiloxanes with Acyclic, Bicyclic and Cubic Core Structures: X-ray Crystal Structure of the Bicyclic Compound $[RSi(OSnPh_2O)_3SiR]$ ($R = (2,6\text{-}Me_2C_6H_3)NSiMe_3$)),
A. Voigt, R. Murugavel and H. W. Roesky.
Organometallics **1996**, *15*, 5097-5101. DOI: 10.1021/om960522g

21 Silanetriols: Versatile Precursors for New Materials.
M. G. Walawalkar, R. Murugavel and H. W. Roesky.

in ***Tailor Made Silicon-Oxygen Compounds : From Molecules to Materials***, (R. Corriu and P. Jutzi - Eds.), Vieweg: Braunschweig/Wiesbaden, pp. 61-73, 1996.

20 An Efficient Synthetic Route to Primary and Secondary Condensation Products of Silanetriols Starting from (Arylamino)trichlorosilanes.
R. Murugavel, P. Böttcher, A. Voigt, M. G. Walawalkar, H. W. Roesky, E. Parisini, M. Teichert and M. Noltemeyer,
J. Chem. Soc., Chem. Commun. **1996**, 2417-2418, DOI: 10.1039/CC9960002417

19 Infrared and ^{29}Si NMR Spectral Investigations on Metallasiloxanes Derived from Organosilanetriols,
A.Voigt, R. Murugavel, U. Ritter and H. W. Roesky.
J. Organomet. Chem. **1996**, *521*, 279-286, DOI: 10.1016/0022-328X(96)06319-X

18 Organometallic Fluorides,
M. G. Walawalkar, R. Murugavel and H. W. Roesky,
Eur. J. Solid State Inorg. Chem. **1996**, *33*, 943-955.

17 Hetero- and Metallasiloxanes derived from Silanediols, Disilanols, Silanetriols and Trisilanols,
R. Murugavel, A. Voigt, M. G. Walawalkar and H. W. Roesky.
Chem. Rev. **1996**, *96*, 2205-2236,
DOI: 10.1021/cr9500747

16 Cubic Group 13 Heterosiloxanes with Four $Co_3(CO)_9$ Cluster Units as Substituents: Novel Soluble Model Compounds for Synthetic Zeolites Showing Catalytic Activity in Hydroformylation Reactions,
U. Ritter, N. Winkhofer, R. Murugavel, A. Voigt, D. Stalke and H. W. Roesky.
J. Am. Chem. Soc. **1996**, *118*, 8580-8587, DOI: 10.1021/ja952986w

15 Silanediols Derived from Silanetriols. X-ray Crystal Structures of (2,4,6-$Me_3C_6H_2$)N($SiMe_3$)Si-($OSiMe_3$)$(OH)_2$ and (2,4,6-$Me_3C_6H_2$)N($SiMe_3$)Si($OSiMe_2R$)$(OH)_2$ [R=CH_2(2-NH_2-3,5-$Me_2C_6H_2$)],
R. Murugavel, A. Voigt, V. Chandrasekhar, H. W. Roesky, H.-G. Schmidt and M. Noltemeyer.
Chem. Ber. **1996**, *129*, 391-395, DOI: 10.1002/cber.19961290405

14 Synthesis and Structure of Gallium Siloxane Cages: Model Substances for Gallium Containing Silicates,
A. Voigt, R. Murugavel, E. Parisini and H. W. Roesky.
Angew. Chem. 1996, *108*, 823-825; ***Angew. Chem., Int. Ed. Engl.*** **1996**, *35*, 748-750,
DOI: 10.1002/anie.199607481

13 Discrete Silanetriols: Building Blocks for Three-Dimensional Metallasiloxanes,
R. Murugavel, V. Chandrasekhar and H. W. Roesky,
Acc. Chem. Res. **1996**, *29*, 183-189, DOI: 10.1021/ar950154x

12 Facile and Rational Route for High Yield Synthesis of Titanasiloxanes from Aminosilanetriols,
A. Voigt, R. Murugavel, V. Chandrasekhar, N. Winkhofer, H. W. Roesky, H-G. Schmidt and I. Usón,
Organometallics **1996**, *15*, 1610-1613. DOI: 10.1021/om950816m

11 Synthesis, Spectroscopic and Structural Characterization of the First Mixed Fluoro-Bromo Group 4 Organometallic Complex [{$CpZrF_2Br$}$_4$] (Cp = C_5Me_5).
E. F. Murphy, R. Murugavel, H. W. Roesky, M. Noltemeyer and H.-G. Schmidt,
Z. Anorg. Allg. Chem. 1996, *622*, 579-582. DOI: 10.1002/zaac.19966220332

10 Cyclic and Polyhedral Aluminosiloxanes with $Al_2Si_2O_4$, $Al_4Si_2O_6$ and $Al_4Si_4O_{12}$ Frameworks: X-ray Crystal Structures of [(2,4,6-$Me_3C_6H_2$)N($SiMe_3$)Si($OAlBu^i$)-($OAlBu^i_2$)O]$_2$ and [(2,6-$Me_2C_6H_3$)N($SiMe_3$)-$SiO_3Al{\cdot}C_4H_8O_2$]$_4$.
V. Chandrasekhar, R. Murugavel, A. Voigt, H. W. Roesky, H. -G. Schmidt and M. Noltemeyer,
Organometallics **1996**, *15*, 918-922. DOI: 10.1021/om950685p

9 New Lipophilic Air-Stable Silanetriols: First Example of an X-ray Crystal Structure of a Silanetriol with Si-N Bonds.
R. Murugavel, V. Chandrasekhar, A. Voigt, H.W. Roesky, H.-G. Schmidt and M. Noltemeyer.
Organometallics, **1995**, *14*, 5298-5301. DOI: 10.1021/om00011a054

8 Preparation, Structural Characterization and Single Crystal X-ray Structures of Cis and Trans Isomers of 2,4,6-Trifluoroethoxy-1,3,5-triethyl-1,3,5,2λ^3,4λ^5,6λ^5-triazatriphosphorinane-2,4,6-trioxide, EtNP(O)(OCH_2CF_3)]$_3$,
R. Murugavel, N. Thirupathi, S. S. Krishnamurthy and M. Nethaji,
Heteroatom Chem. **1995**, *6*, 63-70. DOI: 10.1002/hc.520060114

7 Synthetic, Spectroscopic and Structural Investigations on Cyclic and Acyclic Phosphazanes and their Transition Metal Complexes,
R. Murugavel,
J. Indian. Inst. of Science **1995**, 229-231.

6 New Insights into the Chemistry of Cyclic Phosphorus-Nitrogen Compounds,
S. Narasimhamurthy, N. Thirupathi, R. Murugavel and S. S. Krishnamurthy,
Phosphorus, Sulfur, Silicon **1994**, *93-94*, 221-226. **DOI:** 10.1080/10426509408021821

5 Reactions of Hexachlorocyclotriphosphazane [$MeNPCl_3$]$_2$ with Primary Aromatic Amines: Formation of Highly Basic Bisphosphinimines.
R. Murugavel, S. S. Kumaravel, S. S. Krishnamurthy, M. Nethaji and J. Chandrasekhar,
J. Chem. Soc., Dalton Trans. **1994**, 847-852. DOI: 10.1039/DT9940000847

4 When does a Nitrogen attached to a λ^3-Phosphorus assume a Pyramidal Geometry? Crystal Structures of Group 6 Metal Carbonyl Complexes of Isomeric Forms of λ^3-Cyclotriphosphazanes.

R. Murugavel, S. S. Krishnamurthy and M. Nethaji,
J. Chem. Soc., Dalton Trans. **1993**, 3635-3639. DOI:10.1039/DT9930003635

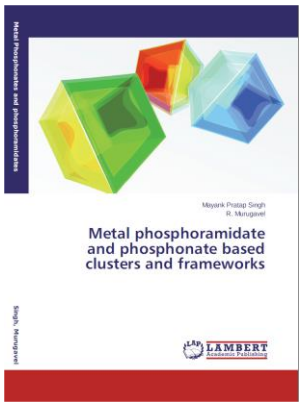
3 Synthesis, Spectral Characterization and Single Crystal X-ray Structure of a Bicyclic Tetraphosphapentazane Tetraoxide, $[N_5P_4Et_5O_4(OC_6H_3Me_2\text{-}2,6)_2]$,
R. Murugavel, S. S. Krishnamurthy and M. Nethaji,
J. Chem. Soc., Dalton Trans. **1993**, 2569-2573. DOI: 10.1039/DT9930002569.

2 Organometallic Chemistry of Diphosphazanes. Part 7. Platinum(II), Palladium-(0), -(I) and -(II) complexes of $RN[P(OPh)_2]_2$ (R = Me or Ph) ,
M. S. Balakrishna, S. S. Krishnamurthy, R. Murugavel, I. I. Mathews and M. Nethaji,
J. Chem. Soc., Dalton Trans. **1993**, 477-482. DOI: 10.1039/DT9930000477.

1 Syntheses, Spectroscopy, Structures and Conformations of λ^3-Cyclotriphosphazanes: Role of Negative Hyperconjugation,
R. Murugavel, S. S. Krishnamurthy, J. Chandrasekhar and M. Nethaji,
Inorg. Chem. **1993**, *32*, 5447-5453. DOI: 10.1021/ic00076a008.

LIST OF BOOKS, MONOGRAPHS ETC. PUBLISHED.

Book



Metal phosphoramidate and phosphonate based clusters and frameworks

Mayank Pratap Singh and R. Murugavel,

LAP LAMBERT Academic Publishing, (2014)

ISBN-10: 3659514195;
ISBN-13: 978-3659514197

Book Chapters / Monograph

(1) Metal Silicate and Phosphate Nanomaterials, P. Vishnoi and R. Murugavel; Book Chapter in "Molecular Materials", Edited by BLV Prasad and others. **CRC Press**, 2017 (in press).

(2) Secondary Building Units and Framework Structures in Aluminum and Zinc Phosphates: The Connection in Between, R. Murugavel and C. N. R. Rao; Book Chapter in "Metal Phosphonate Chemistry: From Synthesis to Applications", Edited by A. Clearfield, K. Demadis, **Royal Society of Chemistry**, 2012, pp 344-363 (BOOK CHAPTER).

(3) Solving Zeolite Jigsaw through Coordination Chemistry, R. Murugavel and M. P. Singh; Book Chapter in Insights into Coordination, Bioinorganic and Applied Inorganic Chemistry, Edited by M. Melník, P. Segľa, M. Tatarko, **Press of Slovak University of Technology, Bratislava**, 2009, pp. 211-220.

(4) Molecular Titanosiloxanes as Model Compounds and Precursors for Titanosilicate Materials. R. Murugavel; Book Chapter In Advances in Metallo-Organic Chemistry 1999, pp. 77-88 (Ed. R. Bohra), **RBSA Publishers**.

(5) Silanetriols: Preparation and Their Reactions. R. Murugavel, M.G. Walawalkar, A. Voigt and H.W. Roesky; Book Chapter in "Organosilicon Chemistry III - From Molecules to Materials", (Eds.: N. Auner and J. Weis**), VCH, Weinheim**, 1998. pp. 376-394.

(6) Silanetriols: Versatile Precursors for New Materials. M.G. Walawalkar, R. Murugavel and H.W. Roesky; Book Chapter in "Tailor Made Silicon-Oxygen Compounds: From Molecules to Materials", (R. Corriu and P. Jutzi - Eds.), **Vieweg: Braunschweig/Wiesbaden**, 1996, pp. 61-73,.

INVITED LECTURES AND CONFERENCE PRESENTATIONS FROM 2007

(Lectures delivered during 1997-2006 are not listed)

59. *"A Tale of Two Phosphates"*, Invited lecture at the Department of Chemistry, IIT-Madras (Jan. 29, 2007).

60. *"Applications of Organometallic and Metal-Organic Chemistry in Nanoscience",* Invited lecture, IIT-Bombay Nanotechnology colloquium (March 26, 2007).

61. *"How rational is the rational synthesis of zeolite materials?"* Invited lecture at Freie Universität, Berlin (June 14, 2007).

62. *"Organophosphate Esters as Synthons in Rational Zeolite Synthesis",* Invited lecture at Ruhr-Universität Bochum (June 21, 2007).

63. *"Organophosphate Esters as Synthons in Rational Zeolite Synthesis",* Invited lecture at Institut für Anorganische Chemie, Universität Stuttgart (July 10, 2007).

64. *"A Tale of Two Phosphates"*, Invited Lecture at the First ACCC held in Okazaki, Japan, (July 29 - August 02, 2007).

65. *"Mono Organophosphates as Starting Point for Novel Metal Phosphate Hybrid Materials",* Invited lecture at the IUMRS-ICAM 2007 at Bangalore (October 8-13, 2007).

66. *"Designer phosphates from primary building blocks"* Invited lecture at the Indo-German Symposium at IIT-Kanpur (October 26-28, 2007).

67. *"Mono-organophosphates and Phosphoramidates as Ligands: A New Chapter in Metal Phosphate Chemistry",* Invited lecture at the Symposium on MTIC, IIT-Madras during (Dec. 6 – 8, 2007).

68. *'Multimetallic Assemblies Through Organophosphate Ligands,"* Invited Lecture, Bharathidasan University, Trichirapalli, (July 18, 2008).

69. *"Peculiarities of Organo-Aluminum Chemistry: Twists and Turns over a Century,"* Invited RSC Lecture at University of Pune (Sept. 05-06, 2008)

70. *"The Chemistry of Aluminum: Twists and Turns Over Last Fifty Years"* and *"Building Block Approach to Porous Solids,"* Two Invited Lectures at CSMCRI as a part of JNC Frontier Lectures (Nov. 20-22, 2008).

71. *"Phosphate Esters as Building Blocks for Rational Synthesis of Zeolite-Type Structures,"* Invited Lecture in the 3rd CRSI-RSC Research Symposium, Pune (Feb 05-08, 2009).

72. *"Solving the zeolite jigsaw through organometallic chemistry."* Invited Lecture at OMCA-2009 held at KIIT, Bhubaneshwar, (Feb. 26-28, 2009).

73. *"Building Block Approach to Porous Solids,"* Invited Lecture at the 'Frontiers in Chemistry' meeting in Univ. Pune (March 13, 2009).

74. *"Solving Zeolite Jigsaw through Coordination Chemistry,"* Plenary Lecture at 22nd ICCBIC to be held in Bratislavia, Slovakia (June 7-12, 2009).

75. *"Organoaluminum Chemistry"* RSC Lecture at Ruia College (September 19, 2009).

76. *"Solving Zeolite Jigsaw: A Synthetic Chemist's Approach",* IIT Bombay Best Paper Award Lecture (October 7, 2009).

77. *"Understanding the Zeolite Jigsaw through Metal-Phosphate Chemistry,"* AAC Colloquium (invited lecture) at Ruhr Univ. Bochum (AAC Colloquium) (October 30, 2009).

78. *"Solving Zeolite Jigsaw Through Synthetic Chemistry",* Invited lecture at Univ. Duisburg-Essen (Feb. 22, 2010)

79. *"A Building Block Approach to Porous Solids",* AV Rama Rao Foundation Prize Lecture, JNCASR (May 05, 2010)

80. *"How Rational is the 'Rational Synthesis of Porous Solids and Designer Zeolites?",* Invited Lecture at Univ. Magdeburg (May 27, 2010)

81. *"Is rational synthesis of porous solids a reality?",* Invited Lecture at Univ. Aachen (June 11, 2010)

82. *"Do discrete molecular clusters add up to porous structures?",* Invited Lecture at Ecole Polytechnique, Palaiseau, Paris (July 08, 2010)

83. *"Do discrete molecular clusters add up to porous structures?",* Invited Lecture at Univ. of Versailles St Quentin en Yvelines, Versailles, France (July 09, 2010)

84. *"Solving zeolite jigsaw through inorganic synthesis",* Invited Lecture at Univ. Braunschweig (July 14, 2010)

85. *"Rational Synthesis of Porous Inorganic Structures",* Invited Lecture at Univ. Munich (LMU) (July 19, 2010)

86. *"Solving zeolite jigsaw through inorganic synthesis",* Invited Lecture at Tech. Univ. Munich (TUM) (July 21, 2010)

87. *"A Building Block Approach to Porous Solids",* Invited Lecture at Max-Planck Institute for Chemical Physics of Solids (July 30, 2010)

88. *"Understanding Aluminophosphates"* Invited Lecture at The Sixth JNC Research Conference on Chemistry of Materials, Cochin (October 2-4, 2010)

89. *"Is there a real rational design in making porous solids",* Invited Lecture at International Year of Chemistry Symposium, JNCASR (January 10, 2011).

90. *"Seeking Insights into the Formation of Framework Structures"*, CNR Rao National Prize in Chemical Sciences Lecture at the CRSI 13th National Symposium in Chemistry at NISER, Bhubaneshwar (February 4-6, 2011).

91. *"Phosphates, Silicates, and Silicophosphates through Building Block Approach",* Invited Lecture at Chennai Chemistry Conference, IIT-Madras (February11-13, 2011).

92. *"Rational Routes to Zeolitic Structures"* MRSI Medal Lecture at the 22nd AGM of Materials Research Society of India held at AMPRI, Bhopal (February 14-16, 2011).

93. *"Role of Double-Four-Ring Beyond Building Block Chemistry and Some Aspects of COFs",* Invited Lecture at Ruhr-University, Bochum, (September 15, 2011)

94. *"Diisopropylphosphate: A Verstatile Synthon in Metal Phosphate Chemistry*", Invited lecture at the Asian Coordination Chemistry Conference, New Delhi (October 17, 2011)

95. *"Metallophosphate-Polyoxometalate Hybrids: Synthesis and Catalysis Aspects",* Invited lecture at the Meeting on Chemistry & Physics of Advanced Materials, Vedic Village, Kolkatta (Oct. 30, 2011)

96. *"Diisopropylphosphate: A Verstatile Synthon in Metal Phosphate Chemistry",* Invited lecture at the Indo European Symposium on Frontiers of Chemistry, NISER, Bhubaneshwar (Nov. 11, 2011)

97. *"Do discrete molecular clusters add up to complex structures?",* Invited lecture at the Symposium on Modern Trends in Inorganic Chemistry, University of Hyderabad (Dec. 11, 2011)

98. *"Rational Routes to Zeolitic Structures"* Invited lecture at National Seminar on Recent Advances in Chemistry at Jadavpur University (*Feb. 10, 2012).*

99. *"Rational Routes to Porous Solids",* Lecture delivered to accept *'*S C Bhattacharya Award for Excellence in Research in Basic Sciences', IIT-Bombay (March 02, 2012).

100. *"Do discrete molecular clusters add up to porous structures?"* Invited lecture at IIT Kanpur (March 16, 2012).

101. "*Zeolites and Porous Solids*" and General Address to Master Students at Summer Training Programme in Physics and Chemistry (STIPAC) held at IGCAR, Kalpakkam (July 03, 2012).

102. "*Porous Solids*" Plenary lecture presented at Recent Advances in Material Science and Technology 2013 (ICRAMST-I3) held at NIT, Suratkal, (January 17-19, 2013).

103. "*Porous Solids through a Metal-Organic Approach*" Invited Lecture at International Conference on Functional Metalorganics and Hybrids, held at Vedic Village Resort by SN Bose Institute, Kolkata (Feb. 08-10, 2013)

104. "*Cluster, Cages, and Framework Solids: A Metal Organic Approach*", Lecture Delivered at Strathclyde-IITB Joint Symposium, Univ. Strathclyde, Glasgow, UK (March 25, 2013)

105. "*Cluster, Cages, and Framework Solids: A Metal Organic Approach*", Special Lecture at Univ of Edinburgh, Edinburgh, UK (March 26, 2013)

106. "*Cluster, Cages, and Framework Solids: A Metal Organic Approach*", Special Lecture at Univ of Manchester, Manchester, UK (March 27, 2013)

107. "*Design and Synthesis of Porous Solids*", Invited Lecture at the Central Electrochemical Research Institute, Karaikudi (June 12, 2013)

108. "*Ab Initio Synthesis of Metallophosphate Porous Solids*", Invited lecture at 7th International Conference on Materials for Advanced Technologies (ICMAT 2013) Singapore (July 01-05, 2013).

109. "*Double-Four-Ring (D4R) Platforms for Sensing, Scavenging and Catalysis Applications*", Invited lecture at INDO-US (CRSI-ACS) Bilateral Symposium on Molecular Materials, held at IISc, Bangalore (July 15-17, 2013)

110. "*Diisopropylphenyl Phosphate: A Versatile Synthon in Metal Phosphate Chemistry*", Keynote address at 4th Asian Coordination Chemistry Conference, ACCC4, Jeju, South Korea (Nov. 04-07, 2013)

111. "*Science - Get Inspired*" Special Lecture to School Students at Noorul Islam Centre for Higher Education, Kumarakoil (Nov. 22, 2013)

112. "*C3 symmetric organic systems for materials chemistry applications and phosphate nanometrials*", Invited lecture at the 12th meeting of Asian Crystallographic Association (AsCA'13), Hong Kong University of Science and Technology (HKUST), Hong Kong. (Dec. 07-10, 2013).

113. "*Evolution of Zeolite Science: Our Recent Results*", Frontier Lecture Series in Chemistry, IIT Indore (January 30-31, 2014)

114. "*Hybridizing Inorganic Solids with Molecular Clusters: Facile Dissolution of s-Block Fluorides in Molecular Lattices*," Invited lecture at JNCASR Silver-Jubilee Mini Symposium and NCU Unit Day (February 11, 2014)

115. "*C3-Symmetric Organic Receptors for Nitroaromatics: Photophysical and Structural Studies*" INDO-US Meeting on Advanced Materials: Current Trends & Future Prospects, Hotel Manu Allaya, Manali, Himachal Pradesh (May 28 – June 1, 2014).

116. *"100 Years of Organoaluminum Chemistry"* Combined Science Academies Lecture at Devanga Arts College, Arupukottai (July 19, 2014 - Forenoon)

117. *"The History of Porous Solids"* Combined Science Academies Lecture at Devanga Arts College, Arupukottai (July 19, 2014 - Afternoon)

118. *"Science-Get INSPIREd",* Invited Lecture at the DST Inspire Workshop held at Devanga Arts College, Arupukottai (October 10, 2014).

119. *"Fusion, folding and misfolding involving S4R molecular zinc phosphates: Do we understand the formation of larger SBUs from smaller SBUs?"* Invited Lecture at the Tenth JNC conference on Chemistry of Materials held at Taj Vivanta, Kovalam (Oct 11-Oct.13, 2014)

120. *"Formation of larger SBUs from smaller SBUs?"* Special Lecture at the IYCr 2014 Meeting, "Recent Advances in Crystallography" at IIT Bombay (Oct 11-Oct.13, 2014)

121. *"Fusion, folding and misfolding involving S4R molecular zinc phosphates: Do we understand the formation of larger SBUs from smaller SBUs?",* Invited Lecture at DAE-BRNS Interdisciplinary Symposium on Materials Chemistry (Dec. 12, 2014)

122. *"Is S4R the most fundamental but elusive SBU that normally transforms to D4R and sometimes to polymers?",* International Conference on Structural and Inorganic Chemistry, IISER Pune (Dec. 13, 2014)

123. *"D4R Metal Phosphate Derived MOFs"*, Invited Lecture at Singapore International Chemistry Conference-8, Singapore (Dec. 15, 2014)

124. "*Metal Phosphate Chemistry*", Special Lecture at VHNSN College, Virudhunagar (January 10, 2015).

125. "*100 Years of Organoaluminum Chemistry*", Invited Lecture at St. Xavier's College, Palayamkottai (January 11, 2015).

126. "*History of Porous Solids and MOFs*", Invited Special Lecture at St. Xavier's College, Palayamkottai (January 11, 2015).

127. "*D4R Phosphate Cluster Based Metal Organic Frameworks*", Invited Lecture at Special MOF meeting, M. G. University, Kottayam (Feb. 26, 2015).

128. *"Is S4R the most fundamental but elusive SBU that normally transforms to D4R and sometimes to polymers?",* Invited Lecture at the International Conference on Inorganic Ring Systems (IRIS), Regensburg, Germany (July 28, 2015).

129. *"Fusion, folding and misfolding involving S4R molecular zinc phosphates: Do we understand the formation of larger SBUs from smaller SBUs?"*, Invited Lecture at Free Univ. Berlin (August 05, 2015).

130. *"Is S4R the most fundamental but elusive SBU that normally transforms to D4R and sometimes to polymers?",* Invited Lecture at Chemical Frontiers, Majorda Resort, Goa (August 17, 2015).

131. "History of porous solids: The past, present, and future," Department Colloquium at IIT Bombay (Sept. 10, 2015).

132. Oct. 09, 2015, Invited Lecture at Aruppukottai College

133. Oct. 10, 2015, Invited Lectures (two) at VHNSN College, Virudhunagar

134. "*Amplifying Zeolite Secondary Building Units Rational Routes to Porous Solids",* Invited Lecture at Technical University Munich (Oct. 19, 2015).

135. "*Amplifying Zeolite Secondary Building Units Rational Routes to Porous Solids",* Invited Lecture at Indo-German Joint Meeting held at Tutzing, Munich Germany (Oct. 23, 2015).

136. *"Zinc Organophosphates: Structure Evolution and Materials Chemistry Applications",* Invited Lecture at the University of Goettingen (Oct. 26, 2015).

137. *"Zinc Organophosphates: Structure Evolution and Materials Chemistry Applications",* Invited Lecture at the University of Dortmund (Oct. 27, 2015).

138. *"Zinc Organophosphates: Structure Evolution and Materials Chemistry Applications",* Invited Lecture at the University of Kassel (Oct. 28, 2015).

139. *"Zinc Organophosphates: Structure Evolution and Materials Chemistry Applications",* Invited Lecture at the University of Stuttgart (Oct. 29, 2015)

140. *"Zinc Organophosphates: Structure Evolution and Materials Chemistry Applications",* Invited Lecture at the University of Heidelberg (Oct. 30, 2015)

141. *"Playing Dice with Molecular Metal Phosphate Building Blocks",* Invited Lecture at Central Univ. Kerala, Kasaragode (Nov. 03, 2015).

142. *"Playing Dice with Molecular Metal Phosphate Building Blocks",* Invited Lecture at Gauhati, Guwahati (Nov. 05, 2015).

143. "*Playing Dice with Zeolite Building Blocks: Structure Evolution and Applications of Zinc Organophosphates",* Invited Lecture at the Faculty of Chemistry, Tata Institute of Fundamental Research, Mumbai (Nov. 23, 2015).

144. *"(a) The recent history of porous solids: What is new on zeolite science? and (b) Hundred Years of Chemical Bond: Examples from Main Group Inorganic Chemistry,"* two invited lecture at the Shivaji University Kolhapur (Nov. 25 & 26, 2015).

145. "*Playing Dice with Zeolite Building Blocks: Structure Evolution and Applications of Zinc Organophosphates",* Invited special lecture at the Symposium on "Modern Trends in Inorganic Chemistry", held at Jadavpur University, Kolkata (Dec. 04, 2015).

146. "*Playing Dice with Zeolite Building Blocks: Structure Evolution and Applications of Zinc Organophosphates",* Invited Lecture at the Annual Winter School on Materials Chemistry at the JNCASR (Dec. 10, 2015).

147. "D4R Phosphate Cluster Based Metal Organic Frameworks", Invited Lecture at the Centre for Nanoscience and Soft-Matter, Bangalore (Dec. 11, 2015).

148. *"Organoaluminum Chemistry" and "Sub-Valence",* Two invited lectures at the Combined Science Academies Symposium on "Frontiers in Chemistry", St. Joseph's College, Trichi (Dec. 18, 2015).

149. *"Soluble Metal Phosphate Supramolecules",* plenary lecture at a symposium at the MS Univ. Baroda, (Dec. 29, 2015).

150. *"Playing Dice with Metal Organophosphate Zeolitic Building Blocks",* Invited lecture, University of Delhi - Kirori Mal College (Feb 03, 2016)

151. *"Valence, Hyper-valence, and Sub-valence",* Invited Lecture during 18 CRSI National Symposium in Chemistry held at Panjab University Chandigarh, (Special Sesson on the Celebration of 100 Years of Chemical Bond) (Feb. 05, 2016).

152. *"Zinc Phosphates: an Update on the SBU Landscape",* Invited Lecture at the University of Goettingen (April 25, 2016).

153. *"Structural Dynamics in Zinc Phosphates: Scanning the SBU Landscape",* Invited Lecture at the University of Braunschweig, Germany (June 21, 2016).

154. *"Metal Organophosphates: New Class of Porous Solids and Magnetic Materials",* Invited Lecture at the University of Lyon / CNRS Lyon, France (June 29, 2016).

155. *"Air-Stable Dy(III) Single-Ion Magnets with Very High Anisotropy Barrier and Blocking Temperature",* Contributed Lecture at the 15th International Conference on Magnetic Materials (ICMM-2016), held at International Conference Center, Sendai, Japan (Sept. 04-08, 2016).

156. *"Valence, Hyper-valence, and Sub-valence – 100 Years of Chemical Bond",* INSPIRE special lecture at the Devanga Arts College, Aruppukottai (Oct. 04-08, 2016).

157. *"Valence, Hyper-valence, and Sub-valence – 100 Years of Chemical Bond",* two special lectures at the Combined Science Academies Workshop, Tezpur University, Assam (Nov. 13, 2016).

158. *"Structural Dynamics in Zinc Phosphates: Scanning the SBU Landscape",* Lecture at the Annual Faculty Meeting of JNCASR, Bangalore, (Nov. 21, 2016).

159. *"Molecular Nanomagnets: Alternative for Silicon-Based Technology?"* Invited lecture at the ICMS Winter School, ICMS, JNCASR, Bangalore, (Dec. 6, 2016).

160. *"Rational Design of Framework Zinc Phosphates",* Invited Lecture at the INST Mohali, (Jan. 16, 2017).

161. *"Rational Design of Framework Zinc Phosphates",* Invited Lecture at IISER Mohali, (Jan. 17, 2017).

162. *"One organophosphate and its many roles: Reconstructing zeolite jigsaw",* Plenary lecture at the International Conference on Advanced Materials, SRM University, Chennai, (Feb. 15, 2017).

163. *"Tuning Structure and Connectivity in Framework Zinc Phosphates through SBU Engineering*", Invited Lecture at the annual International Workshop on Advanced Materials, RAK-Center for Advanced Materials, Ras-Al-Khaimah, UAE, (Feb. 22, 2017).

164. *"A stroll through the zeolite SBU landscape"*, Invited lecture at NISER, Bhubaneswar (Apr. 01, 2017).

165. *"Rational Design of Framework Zinc Phosphates", Plenary* lecture at the RSC ISACS: Challenges in Inorganic Chemistry, Manchester, UK (April 10-13, 2017).

166. “An update from RM Laboratory” Invited Lecture at the University of Göttingen, Germany (July 10, 2017)

167. **“***A Main Group Chemist’s Perspective of Porous Solids and Magnets”* - CRSI Silver Medal Lecture presented during CRSI National Symposium Chemistry held in IICT Hyderabad (July 14-16, 2017).

168. Invited Lecture at the JNCASR Symposium on Chemistry of Materials, Taj Vivanta, Kovalam, Organized by IISER Trivandrum, Oct 1-3, 2017.

169. Invited Lecture at the K C Kumara Swamy 60th Birthday Symposium, October 13-14, 2017, University of Hyderabad

170. Invited lecture at the Special Symposium on NanoChemistry at IIT Kharagpur, Nov. 11, 2017.

171. Invited Lecture at IISER Kolkata Department of Chemical Sciences In-house Symposium, Nov. 18, 2017.

172. *“Covalent Organic Frameworks – What is New?”* Invited lecture at the ICMS Winter School, ICMS, JNCASR, Bangalore, Dec 04-08, 2017.

173. Three invited special lectures on (i) Valence and Hypervalence, (ii) Organoaluminum Chemistry, and (iii) Porous Solids, at the Combined Science Academies Lecture Workshop at the Bharathiar University, Coimbatore, Feb 14-16, 2018.

174. Two invited special lectures on (i) Porous Solids and (ii) Chemical Processes that Changed Our Lives, at the Combined Science Academies Lecture Workshop at the Bharathidasan University, Tiruchirappalli, March 22-24, 2018.

175. “Molecular Metal Phosphates: Precursors to a new generation of materials” Session talk in ICPC, Budapest, July 8-13, 2018.

176. “Metal Phosphates and Air-Stable Magnets: Enriching Ln-ion Single Ion Magnetism through Symmetry and Axiality, Invited lecture presented at the CFG-2018, Goa, August 18-21, 2018.

177. “Frameworks, Polymeric and Discrete Metal Phosphates: Does Size Really Matter?” Invited lecture at the RSC-CRSI Symposium in Inorganic Chemistry, Manchester, UK, Sept. 26, 2018.

178. Two invited special lectures on (i) Bonding in Main Group and (ii) Chemical Processes that Changed Our Lives, at the Combined Science Academies Lecture Workshop at the Periyar University, Salem, Oct. 4-6, 2018.

179. “New Synthetic Strategies in Molecular Metal Phosphate Chemistry” Plenary talk at the Main Group Molecules to Materials meeting, IISc Bangalore, Oct. 28-31, 2018.

180. “Molecular Metal Phosphate Materials: Sensors, Catalysts, and Molecular Magnets” Invited talk at the ICEAN 2018, held at NSW, Australia, October 30 – Nov. 02, 2018.

181. “Molecular Nanomagnets: Alternative for Silicon-Based Technology? From SMMs to SIMs”, Lecture presented at the ICMS Winter School 2018, JNCASR, Bangalore, Dec. 03-07, 2018.

182. “Molecular and Framework Metal Phosphates and the Connection Between Them”, Invited talk at the Conference on New Frontiers in Chemical Science, held at the Department of Chemistry, IIT Bombay, Dec. 13-14, 2018,

183. “Molecular Metal Phosphates: Sensors, Catalysts and Magnets”, Plenary lecture presented at the FCASI-2018, University of Rajasthan, Dec. 21-22, 2018.

184. “A decade plus of metal phosphate chemistry: What have we learnt?”, Invited lecture presented at the IISER, Thiruvananthapuram, January 29, 2019.

185. “Molecular and Framework Metal Phosphates: Applications as Sensors, Catalysts and Molecular Magnets” Invited lecture presented at the Manonmanium Sundaranar University, January 30, 2019.

186. “Molecular Metal Phosphate Materials: Applications as Sensors, Catalysts, and Molecular Magnets”, Invited Lecture presented at the Recent Developments in Chemical Research, IIS University, Jaipur, Feb. 1-2, 2019.

187. “Newer Synthetic Strategies for Covalent Organic and Covalent Metal-Organic Frameworks (COFs and CMOFs)”, Invited talk at the “ChemPhysMat-2019” (CNR@85), JNCASR, Bangalore, Feb 20-22, 2019.

188. “The Science of Porous Solids: Past, Present, and Future”, National Science Day Symposium and SASTRA-CNR Rao Award Acceptance Talk at SASTRA University, Thanjavur, February 28, 2019.

189. “Controlling of Dimensionality of Metal Phosphates: A Chemical Synthesis Approach to New Materials” Invited lecture at VIT University, Vellore, March 09, 2019.

190. “Controlling of Dimensionality of Metal Phosphates: A Chemical Synthesis Approach to New Materials” Invited lecture at BHU, Varanasi, March 11, 2019.

191. “Controlling of Dimensionality of Metal Phosphate Frameworks”, Presented at the 47th National Seminar on Crystallography, Anushaktinagar, Mumbai, June 20, 2019.

192. “Molecular & Framework Metal Phosphates: Sensors, Catalysts and Magnets”, Lecture presented at ICMAT-2019, Singapore, June 24-28, 2019.

193. Controlling of Dimensionality: A Chemical Synthesis Approach to New Materials“, Invited lecture presented at IIT Indore (Prof. Ila 75th Birthday Symposium), July 13-15, 2019.

194. “Controlling of Dimensionality: A Chemical Synthesis Approach to New Materials”, invited lecture at the Indo-German conference “Emerging Trends in Chemistry and Materials” August 28-29, 2019.

195. “Controlling Dimensionality of Metal Phosphate Frameworks: A Chemical Synthesis Approach to New Materials”, Invited Plenary Lecture at CRIKC Conference, Nov. 02-03, 2019.

196. “Elevating Lanthanide Single-Ion Magnetism: Role of Symmetry and Axiality”, Invited lecture presented at the MTMM-2019”, IISER Bhopal, Nov. 27-30, 2019

197. “Thermally Labile Metal Mono and Dialkylphosphates: Ideal Precursors for Ceramic and 2-D Materials”, Plenary lecture presented at the MTIC-2019, IIT Guwahati, December 11-14, 2019.