

National Institute of Technology, Tiruchirappalli:
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Curriculum Vitae



Brief Profile:

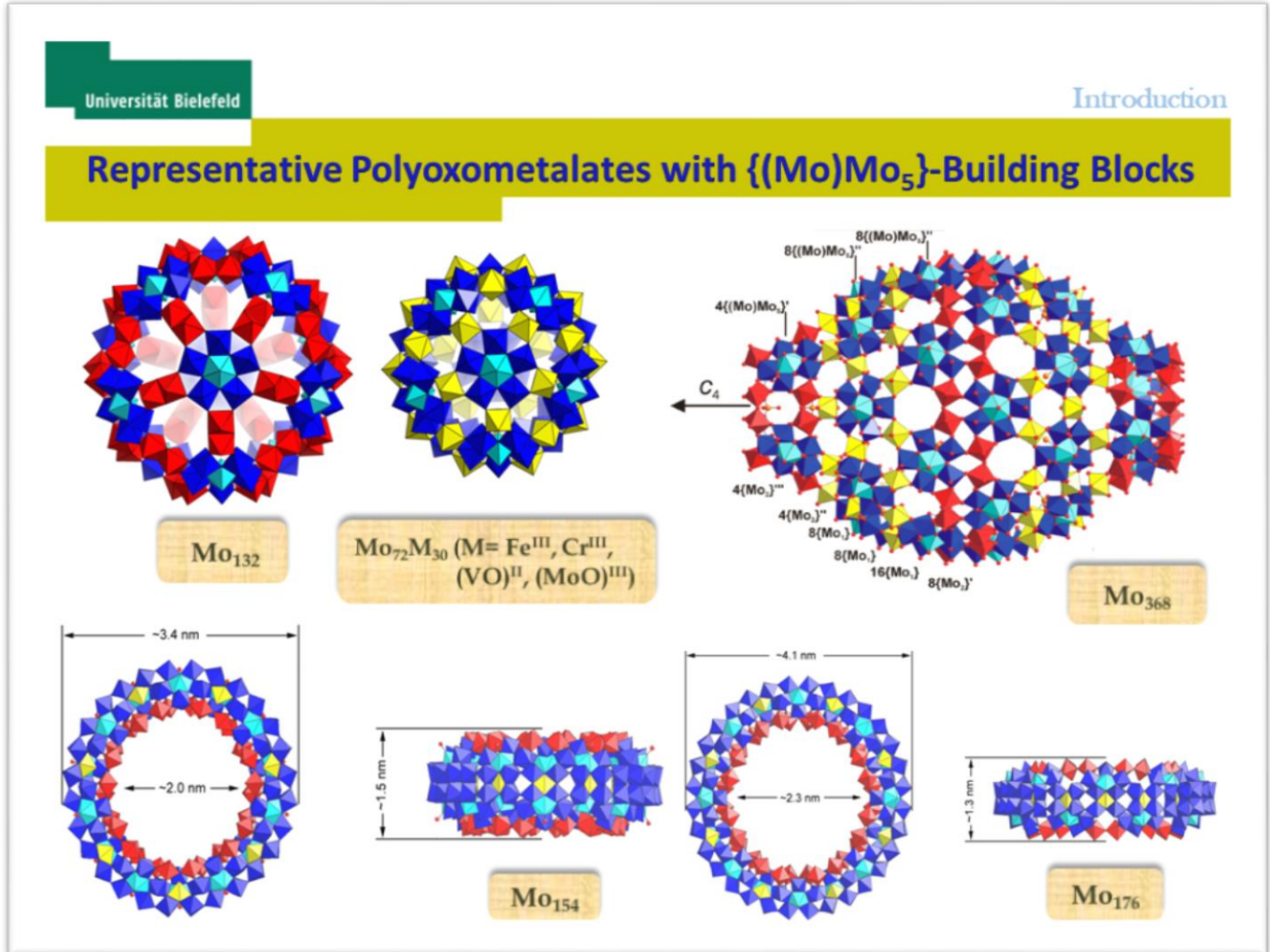
I have completed my PhD studies mainly based on the coordinative stabilization of reactive species via. encapsulation chemistry inside the Keplerate cluster under the supervision of Prof. Dr. Achim Müller in the University of Bielefeld in Germany. Although, my major expertise includes the inorganic synthesis and the structural characterization by single crystal X-ray data analysis (both small as well as large molecules with extremely complicated disorder), but I am also practiced with the hand-on operation of SEM and TEM machines for material characterization.

To introduce myself, in short, I have completed my bachelor degree in the Presidency College, Kolkata. My research during my master's thesis was focused on the inorganic nano-chemistry inside the cavity of Carbon Nanotubes (CNT), under the supervision of Prof. Dr. S. Sarkar in IIT Kanpur. Thereafter I moved to Germany for my doctoral studies in Bielefeld University which was completed in September, 2015 with *Summa Cum Laude*. We have published 20 best rated papers among which 6 papers in *Angew. Chem.*; 1 paper in *Adv. Materials*; 3 papers in *Chem. Commun.* and 6 *Chem. Eur. J.* papers are noteworthy. The reversible uptake and release of CO₂ and SO₂ is one of the most striking features of my research.

In Bielefeld, I mainly worked on the design and synthetic strategy development for studying the coordination chemistry inside nanocavity of an extremely large spherical metal oxide cluster, known as {Mo₁₃₂}-Keplerate. The icosahedral {Mo₁₃₂}-cluster is one of the most celebrated molecule in inorganic chemistry not only because of its remarkable pentagonal symmetry and water solubility but also due to its deliberated coordinative tunability of the cluster interior which is a unique property in case of the nanomaterials. These large superfullerenes are synthesized through the bottom-up approach: the incorporation of the reduced dinuclear units to the molybdenum dynamic library effects the expression of the complementary pentagonal units which can self-assemble immediately leading to the formation of the unique POM cluster. The most attractive feature of those nanoclusters is the presence of the 20 {Mo₉O₉}-type metallo-crown pores on the cluster surface which are arranged in the form of regular dodecahedron. In 2016, I have finished one-year postdoc with Prof. Dr. M. Driess and Prof. Dr. R. Schomäcker in Technische Universität Berlin on the electrocatalytic water splitting and photocatalytic bio-degradation using metal oxides and sulfides. As an outcome, we have filed a long extensive European patent application on the visible light induced purification of heavily contaminated water from TU Berlin. During my second postdoctoral assignment in the Weizmann Institute of Science in Israel in 2017, I also have worked on exploring the options for the nano-decoration of Au-nanostructures with transition metal chalcogenides, extensive SEM and TEM characterization of WS₂ nanotubes and inorganic fullerenes and their related catalytic properties.

Please visit my personal Webpage: <https://somgor.wixsite.com/somenathgarai>

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CHEMISTRY
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Concept
Bright Copper Nanowires Multilayer Cu Composites with 1,2-Diols
and Their Application to
T. Bourdoux, S. Bilek et al.

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JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

**Alcohols as Latent Hydrophobes:
Entropically Driven Uptake of 1,2-
Diol Functionalized Ligands by a
Porous Capsule in Water**

Sourav Chakraborty, Alina Shnaiderman Grego,
Somenath Garai, Mark Baranov, Achim Müller,
and Ira A. Weinstock*

Journal of the American Chemical Society
2019, 141, 23, 9170-9174 (Communication)
Publication Date (Web): June 3, 2019

Abstract Full text PDF

ABSTRACT

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Angewandte
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International Edition
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2016-55/23



Cover Picture

A. Müller et al.
Densely Packed Hydrophobic Clustering: Encapsulated Valerates Form
a High-Temperature-Stable (Mo₇₂)₃₀ Capsule System

DOI: 10.1002/anie.201611111

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1. Name: **Somenath Garai**
 2. Designation: *Dr. rer. nat.*
 4. Office Address: Room no. 219, Department of Chemistry, NIT Tiruchirappalli, TN-620015. India.
 5. Telephone (Direct) (Optional):
Telephone: Mobile (Optional): +91-8247085726;
+91-9486001177 (Warden Official)
 6. Email (Primary): *sgarai@nitt.edu* Email (Secondary): *somgor@gmail.com*
 7. Field(s) of Specialization: Inorganic Nanochemistry for Energy Applications, Catalysis Under the Confined Space, Single crystal X-ray Diffraction.
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8. Employment Profile

Job Title	Employer	From	To
Scientific Coworker	Bielefeld University, Germany	2010	2015
Postdoctoral researcher	Technische Universität, Berlin	2016	2016
Postdoctoral researcher	Weizmann Institute of Science, Israel.	2017	2017
TEQIP-III Assistant Professor in Jabalpur Engineering College	National Project Implementation Unit (NPIU) of the MHRD, Govt. of India.	2018	2018 (3 months)
Assistant Professor	NIT Tiruchirappalli	2018	Till to date.

9. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year of Passing	Division/ Grade	Subjects/ Specialization
<i>Dr. rer. nat.</i>	Bielefeld University, Germany	2015	<i>Summa Cum Laude</i> (Best)	Nano-confined Coordination Chemistry
M. Sc.	IIT Kanpur	2010	First	Inorganic Nano-chemistry

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B. Sc.	Presidency College, Kolkata/ Calcutta University.	2008	First	Chemistry (Hons.)
H. S.	Phanindradev Institution, Jalpaiguri/ WBBSE.	2005	First	Science

10. Details of PhD degree:

Thesis Title	College/ Institute	Board/ University	Name of Supervisor(s)	Award Date
Metal-Oxide Superfullerene Delivers A Versatile Platform For Coordination Chemistry Under Confined Condition: Encapsulation Of The Biologically Relevant Ions And Gases.	Bielefeld University, Germany	Bielefeld University, Germany	Prof. Dr. Dr. <i>h c mult.</i> Achim Müller	25 th September, 2015

11. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/ Institution	From	To
Assistant Professor	Chemistry/ NIT Tiruchirappalli	2018	Till to date
Co-Ordinator for Ph.D. entrance examinations.	Chemistry/ NIT Trichy	2018	
Invigilator- AICTE Examination	NIT Trichy	2018	
Stock Verification Officer	Chemical Engineering/ NIT Trichy	2018	
Warden for the 1 st year Hostels.	DIAMOND and JADE/ NIT Trichy	2018	Till to date
The Faculty Advisor for “AAVEG” Festival.	NIT Trichy	2018	2019
Committee Member of PRAGYAN, 2019	NIT Trichy	2019	

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Esteemed member of Guest House advisory Committee	NIT Trichy	2019	Till to date
Committee Member of LEAP, 2019	NIT Trichy	2019	
Committee Member of CSAB, 2019	NIT Trichy	2019	

12. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Member of Budget Allocation Committee	Jabalpur Engineering College	2018	
Visiting Committee Member for MOU	NIT Trichy and Bharat Heavy Electricals Limited (BHEL).	2018	

13. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2019	Recognized Faculty Award for Sponsored Research Projects, Institute Day, 2018	NIT Trichy.
2010	All India Rank 01 in National Eligibility Test (NET, June, 10)	Council of Scientific and Industrial Research (CSIR).
2009	All India Rank 10 in National Eligibility Test (NET, June, 09)	Council of Scientific and Industrial Research (CSIR).
2010	All India Rank 35 in Graduate Aptitude Test (GATE)	Indian Institute of Technologies (IITs).
2008	All India Rank 18 in the Joint Admission test for M. Sc. (JAM)	Indian Institute of Technologies (IITs).
2008	All India Rank 02 in the Post-Graduate Entrance test for M. Sc. (BHU-PET)	Benares Hindu University (BHU).
2002	National Merit Scholarship	Govt. of West Bengal, India.

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14. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From	To
2016	VATAT- Postdoctoral Fellowship.	Israel's Council for Higher Education Planning and Budgeting Committee.	2017	2017
2018	INSPIRE- Faculty Award (<i>Research grant not obtained due to present employment</i>)	DST-INSPIRE	2018	N/A

15. Details of Academic Work

A. Professional Training Received/ Short Term Course Attended

Year of Training	Nature of Training	Training provided by, Organization	Duration
2015	Zurich School of Crystallography (ZSC 2015)	University of Zurich, Switzerland	2 Weeks (Received 3 ECTS Credit Points)
2015	CSD workshop-2015	Goethe Universität, Frankfurt Am Main, Germany	3 Days
2017	Workshop on Transmission Electron Microscopy, (EMAT- 2017)	University of Antwerp, Belgium.	2 Weeks
2018	Faculty Induction Program	IIT Indore	1 Weeks
2018	Professional Development Training	NIT Trichy	1 Weeks

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B. Courses taught at Postgraduate and Undergraduate levels

Academic Year	Semester	Course Title	Level (B.Tech./M.Sc.)	Credit
2017-18	Even	Engineering Chemistry and Laboratory	B. Tech.	2
2017-18	Even	Inorganic and Material Chemistry	M.Sc.	1
2018-19	Odd	CHIR11: Engineering Chemistry and Laboratory	B. Tech.	3
2018-19	Odd	CH629: Inorganic Clusters, Rings and Cages	M.Sc.	3
2018-19	Odd	CH603: Basic Inorganic Chemistry	M.Sc.	1
2018-19	Odd	CH611: Qualitative Inorganic Analysis & Preparations	M.Sc.	2
2018-19	Even	CHIR12: Engineering Chemistry and Laboratory	B. Tech.	4
2018-19	Even	CH604: Organometallic and Bio-Inorganic Chemistry	M.Sc.	2
2018-19	Even	CHIR13: Engineering Chemistry and Laboratory (IIT-Trichy)	B. Tech.	3

C. Courses created at Postgraduate and Undergraduate levels

Academic Year	Semester	Course Title	Level (B.Tech./M.Sc.)	Credit
2019-20	Even	Single Crystal X-ray Structure Determination	M. Sc.	3

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16. Details of Major Sponsored Research Projects

Title of Project	Funding Amount (In Lakh)	Funding Agency	Duration		Status
			From	To	Ongoing/ Completed
Metal-Oxide Super-Fullerene Delivers a Versatile Platform for Catalytic Water Splitting Under Confinement.	38	SERB-ECR	25.03.2019	24.03.2022	Ongoing
Photo induced Electron Transfer and Facile Charge Separation for Energy Applications	49.5	MHRD-SPARC			Approved

17. Details of Major Sponsored Research Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Gainful Reclamation of E-waste using a catalytic Reactor	BHEL	04.2019	12.2019	Ongoing

18. PhDs Supervision

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Status	Year of Award/ Registration
Pandiraj S.	Synthesis, Characterization and Catalytic/supercapacitor properties of polyoxoniobates.	Co-Supervisor	Ongoing	07/2018
Ullas Krishnan	Deconvolution of the Central Dogma of Photosynthesis: Biomimetic Energy Efficient CO ₂ Reduction by Water.	Co-Supervisor	Ongoing	08/2016

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19. PG Dissertation Supervision

Name of the PG Student	Title of PG Thesis	Institute	Status	Date of Award/ Submission
Martin Groß	Photokatalytische Totaloxidation und Filtrationsprozesse zur Wasserreinigung am Beispiel verschiedener organischer Schlüsselkomponenten	TU Berlin	Completed	11/04/2017
Reshma Poulouse	Exploring the Catalytic Activity Ru(II) (<i>p</i> -cymene) Complexes of PO-Nb for Transfer Hydrogenation (TH) Reaction and Biofuel Synthesis under Base-Free Conditions	NIT Trichy	Completed	31/05/2019
Aiswarya P	Exploring the Catalytic Behaviour of Silicomolybdic Acid	NIT Trichy	Completed	31/05/2019

20. Participation in Workshops/ Symposia/ Conferences/ Colloquia/ Seminars/ Schools etc. (mentioning the role)

Date (s)	Activity Type	Level of Event	Role	Title of proceedings	Event Organized by
12.07.2014 – 15.07.2014	Conference	International	Poster presentation	Inorganic Cells: Versatile Platforms for Interesting Phenomena at the Nanoscale.	Frontiers in Metal-Oxide Cluster Science (PoChMoN) at Maffliers, France
16.10.2014 – 17.10.2014	Conference	National	Associated with the poster presented in	Protein sized polyoxo-molybdate {Mo ₃₆₈ }-clusters encapsulated in hydrophobic shell and self-assembled into Vesicles.	Mastering in Molecules and Materials at NIT Kurukshetra, India
19.04.2015 –	Conference	International	Associated with the	Mo-132 meets amino acids and peptides.	56 th Experimental Nuclear Magnetic Resonance Conference (ENC)

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24.04.2015			poster presentation		at California, USA.
05.12.2015 – 08.12.2015	Conference	International	Poster presentation	Inorganic Cells: Versatile Platforms for Interesting Phenomena at the Nanoscale.	Asian Crystallographic Association (AsCA), at Kolkata, India.
13.02.2017 – 14.02.2017	Conference	International	Poster presentation	Spherical Inorganic Superfullerene: Rationalization of Unique Gated Confinement at the Nanoscale.	82 nd Annual Meeting of the Israel Chemical Society at Tel Aviv, Israel.
10.04.2017 – 12.04.2017	Conference	International	Poster presentation	Spherical Inorganic Superfullerene: Rationalization of Unique Gated Confinement at the Nanoscale.	Nanotechnology from Academia to Industry (NTAI) at Holon Institute of Technology, Israel.
21.08.2017 – 28.08.2017	Conference	International	Oral presentation	Inorganic Super-Fullerenes: Remarkable Versatility for Nano-confined Functionalization.	24 th Congress and General Assembly of International Union of Crystallography (IUCr-2017) at Hyderabad, India.
13.10.2017 – 14.10.2017	Conference	International	Poster presentation	Inorganic Nano-Football: Unique Options for Studying the Cavity Confined Catalysis in Tandem	Recent Developments In Science, Engineering and Technology (REDSET-2017) at G. D. Goenka University, Delhi-NCR
13.07.2018 – 15.07.2018	Conference	National	Poster presentation	Water Soluble Inorganic Keplerates: Exploring the	23 rd CRSI National Symposium in Chemistry at

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				Immense Potential for Encapsulation Chemistry	IISER Bhopal, M.P.
26.09.2018 – 29.09.2018	Conference	International	Poster presentation	Highly Soluble Inorganic Nano-containers: Revisiting the Enormous Aspects for Encapsulation Chemistry and SC-XRD	Energy Conversion and Storage (M-TECS) at Bhaba Atomic Research Center, Mumbai (BARC)

21. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue

22. Invited Talks delivered

Date (s)	Activity Type	Level of Event	Title of proceedings	Event Organized by
29.08.2017 – 30.08.2017	Conference	International	Inorganic Super-Fullerenes: Remarkable Versatility For the Nano-Encapsulation of the Materials.	Structural Aspects in Studying Chemistry of Materials ('SASChem'), satellite meeting of the IUCr 2017 Congress in IISER Kolkata.
09.10.2018 – 10.10.2018	Workshop	National	Instrumental Methods for Chemical Analysis	Alchemist'18 by Chemical Engineering Association at the Department of Chemical Engineering, NIT Trichy.
09.01.2019 – 10.01.2019	Conference	National	Applications of nanomaterial in catalysis	Nano National Summit- Current Trends and Future perspectives (NNSCTFP-2019) at the Holy Cross

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				College, Trichy.
05.02.2019 – 07.02.2019	Training Program	Tamil Nadu Water Supply Board	Solar Energy-An Overview	Energy Efficiency, Energy Audit in O&M of CWSS/UGSS including selection of Mechanical, Electrical & Solar Energy Equipment's.
18.03.2019 – 19.03.2019	Symposium	National	Inorganic Nano-Fullerenes: Delivering the Immense Potential for Encapsulation Chemistry Towards Catalysis	Celebration of International Year of Periodic Table, IYPT 2019; Bankura Sammilani College, India

23. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Honorary Member	World Directory of Crystallographers (WDC) in the International Union of Crystallographic Association	(IUCr-ID: IUCr23761) ; 2017 Onwards
Member	European Crystallographic Association	(ECA-ID 9811); Onwards
Member	German Chemical Society	(GDCh ID 106728) ; 2014 Onwards
Member	American Chemical Society	(ACS ID 30889895) ; 2015 Onwards

24. Academic Foreign Visits

Country	Duration of Visit	Programme
Germany	6 years	PhD, Post-doc
Israel	1 year	Post-doc

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Switzerland	2 weeks	Summer School
Belgium	2 weeks	Summer School
France	1 week	Conference

25. Publications- Total 30

(A) Refereed Research Journals: (Average Impact Factor: **8.635**)

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal
R. Bar-Ziv, A. Lavie, A. Jain, S. Garai, R. Popovitz-Biro, R. Tenne, R. Arenal, A. Ramasubramaniam, L. Lajaunie, M. Bar-Sadan	Core-shell Au-MoS ₂ nanoparticles electrocatalysts for the hydrogen evolution reaction.	J. Materials Chem. A (<i>SUBMITTED</i>)			2019	9.931
S. Chakraborty, S. A. Grego, S. Garai, M. Baranov, A. Müller, I. A. Weinstock	Alcohols as Latent Hydrophobes: Entropically-Driven Uptake of 1,2-Diol Functionalized Ligands by a Porous Capsule in Water.	J. Am. Chem. Soc. (DOI:10.1021/jacs.9b03542)	141	9170-9174	2019	14.357
S. Barman, S.S. Sreejith, S. Garai, R. Pochamoni, S. Roy	Selective Photocatalytic Carbon Dioxide Reduction by A Reduced Polyoxomolybdate.	<i>ChemPhoto-Chem</i> (DOI:10.1002/cptc.20180210)	3	93-100	2019	Yet to come
P. Menezes, C. Panda, S. Garai, C. Walter, A. Guet, M. Driess	Structurally Ordered Intermetallic Cobalt Stannide Nanocrystals for High-Performance Electrocatalytic Overall Water-Splitting.	<i>Angew. Chem.</i> (DOI:10.1002/ange.201809787)	130	15457-15462	2018	12.102
P. Menezes, C. Panda, S. Garai, C. Walter, A. Guet, M. Driess	Structurally Ordered Intermetallic Cobalt Stannide Nanocrystals for High-Performance Electrocatalytic Overall Water-Splitting.	<i>Angew. Chem. Int. Ed.</i> (DOI:	57	15237-15242	2018	12.102

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		10.1002/anie.201809787)				
C. Panda, A. Chandra, T. Corona, E. Andris, B. Pandey, S. Garai, N. Lindenmaier, S. Künstner, E. R. Farquhar, J. Roithová, G. Rajaraman, M. Driess, K. Ray	Nucleophilic vs Electrophilic Reactivity of Bioinspired Super-oxido Nickel(II) Complexes.	<i>Angew. Chem.</i> (DOI: 10.1002/ange.201808085R 1)	130	15099-15103	2018	12.102
C. Panda, A. Chandra, T. Corona, E. Andris, B. Pandey, S. Garai, N. Lindenmaier, S. Künstner, E. R. Farquhar, J. Roithová, G. Rajaraman, M. Driess, K. Ray	Nucleophilic vs Electrophilic Reactivity of Bioinspired Super-oxido Nickel(II) Complexes.	<i>Angew. Chem. Int. Ed.</i> (DOI: 10.1002/anie.201808085R 1)	57	14883-14887	2018	12.102
K. Tandekar, S. Garai, S. Supriya	A Reversible Redox Reaction in a Keggin Polyoxometalate Crystal Driven by Visible Light: Programmable Solid-State Photochromic switch.	<i>Chem. Eur. J.</i> (DOI: 10.1002/chem.201801126)	24	9747-9753	2018	5.317
S. Barman, S. Das, S.S. Sreejith, S. Garai, R. Pochamoni, S. Roy	Selective light driven reduction of CO ₂ to HCOOH in water using a {MoV ₉ } _n (n = 1332–3600) based soft-oxometalate (SOM).	<i>Chem. Commun.</i> (DOI: 10.1039/C7CC09520A)	54	2369-2372	2018	6.319
S. Garai, A. Merca, M. Rubčić, H. Bögge, A. Müller	Inorganic Super-Fullerenes: Remarkable Versatility for Nano-Confined Functionalization.	<i>Acta Cryst.</i>	A70	C1356	2017	4.099
S. Das, S. Kumar, S. Garai, R. Pochamoni, S. Paul, S. Roy	A Softoxometalate [{K _{6.5} Cu(OH) _{8.5} (H ₂ O) _{7.5} } _{0.5} @{K ₃ PW ₁₂ O ₄₀ }] _n (n=1348-2024) as an Efficient Inorganic Material for CO ₂ Reduction with Concomitant Water Oxidation.	<i>ACS Appl. Mater. Interfaces</i> (DOI: 10.1021/acami.7b13507)	9	35086-35094	2017	7.504

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S. Garai, H. Bögge, A. Merca, O. A. Petina, A. Grego, P. Gouzerh, E. T. K. Haupt, I. A. Weinstock, A. Müller	Front Cover: Densely Packed Hydrophobic Clustering: Encapsulated Valerates Form A High-Temperature-Stable {Mo ₁₃₂ } Capsule System.	<i>Angew. Chem. Int. Ed.</i> (DOI: 10.1002/anie.201601140)	55	6634-6637	2016	11.994
S. Garai, H. Bögge, A. Merca, O. A. Petina, A. Grego, P. Gouzerh, E. T. K. Haupt, I. A. Weinstock, A. Müller	Front Cover: Densely Packed Hydrophobic Clustering: Encapsulated Valerates Form A High-Temperature-Stable {Mo ₁₃₂ } Capsule System.	<i>Angew. Chem.</i> (DOI: 10.1002/ange.201601140)	128	6746-6749	2016	11.994
N. A. G. Bandeira, S. Garai, A. Müller, C. Bo	The Mechanism of CO ₂ Hydration: A Porous Metal-Oxide Nanocapsule Catalyst Can Mimic the Biological Carbonic Anhydrase Role.	<i>Chem. Commun.</i> (DOI: 10.1039/C5CC06423F)	51	15596-15599	2015	6.567
F. Haso, D. Li, S. Garai, J. M. Pigga, T. Liu	Hot Paper & Frontispiece: Self-Recognition Between Two Almost Identical Macroions During Their Assembly: The Effects Of pH And Temperature.	<i>Chem. Eur.</i> (DOI: 10.1002/chem.201502267)	21	13234-13239	2015	5.771
E. Mahon, S. Garai, A. Müller, M. Barboiu	Biomimetic Approach for Ion Channels Based on Surfactant Encapsulated Spherical Porous Metal-Oxide Capsules.	<i>Adv. Mater.</i> (DOI: 10.1002/adma.201501255)	27	5165-5170	2015	18.96
S. Garai, M. Rubčić, H. Bögge, E. T. K. Haupt, P. Gouzerh, A. Müller	VIP Paper: A Unique Fluoride Nanocontainer: Porous Molecular Capsules Can Accommodate an Unusually High Number Of “Rather Labile” Fluoride Anions.	<i>Angew. Chem. Int. Ed.</i> (DOI: 10.1002/anie.201411814)	54	5879-5882	2015	11.709
S. Garai, M. Rubčić, H. Bögge, E. T.	VIP Paper: A Unique Fluoride Nanocontainer: Porous Molecular Capsules	<i>Angew. Chem.</i>	127	5977-5980	2015	11.709

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K. Haupt, P. Gouzerh, A. Müller	Can Accommodate an Unusually High Number Of "Rather Labile" Fluoride Anions.	(DOI: 10.1002/ange.201411814)				
S. Garai, M. Rubčić, H. Bögge, P. Gouzerh, A. Müller	Hot Paper: Porous Capsules with A Large Number of Active Sites: Nucleation/Growth Under Confined Conditions.	<i>Chem. Eur. J.</i> (DOI: 10.1002/chem.201406191)	21	4321-4325	2015	5.771
S. Garai, A. Merca, S. Bhowmik, A. Ghosh, H. Li, F. Haso, H. Nogueira, T. Liu, E. T. K. Haupt, L. Wu, P. Gouzerh, A. Müller	Back Cover: Hedgehog-Shaped {Mo ₃₆₈ } Cluster: Unique Electronic/Structural Properties, Surfactant Encapsulation and Related Self-Assembly into Vesicles and Films.	<i>Soft Matter</i> (DOI: 10.1039/C4SM02662D)	11	2372-2378	2015	3.798
A. Müller*, S. Garai, C. Schäffer, A. Merca, H. Bögge, A. J. M. Al-Karawi, T. K. Prasad	Front Cover: Water Repellency in Hydrophobic Nanocapsules- Molecular View on Dewetting.	<i>Chem. Eur. J.</i> (DOI: 10.1002/chem.201402986)	20	6659-6664	2014	5.731
V. Korenev, A. Boulay, M. Haouas, F. Bannani, V. Fedin, M. Sokolov, E. Terazzi, S. Garai, A. Müller, F. Taulelle, J. Marrot, N. Leclerc, S. Floquet, E. Cadot	Tracking "Apolar" NMe ₄ ⁺ Ions within Two Polyoxothiomolybdates Having the Same Building Blocks: Smaller Clathrate and Larger Highly Porous-Type Clusters in Action.	<i>Chem. Eur. J.</i> (DOI: 10.1002/chem.201303719)	20	3097-3105	2014	5.731
J. Gooch, A. A. Jalan, S. Jones, C. R. Hine, R. Alam, S. Garai, M. M. Maye, A. Müller, J. Zubieta	Keplerate Cluster (Mo-132) Mediated Electrostatic Assembly of Nanoparticles.	<i>J. Colloid Interface Sci.</i> (DOI: 10.1016/j.jcis.2014.06.059)	432	144-150	2014	3.368
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Averseng, M. Che, A. Müller	Homogeneously Reduced at Different Sites and Trapped in A Host Based on Chemical Adaptability.	10.1002/anie.201305402)				
A. Merca, S. Garai, H. Bögge, E. T. K. Haupt, A. Ghosh, X. López, J. M. Poblet, F. Averseng, M. Che, A. Müller	An Unstable Paramagnetic Isopolyoxomolybdate Intermediate Non-Homogeneously Reduced at Different Sites and Trapped in A Host Based on Chemical Adaptability.	<i>Angew. Chem.</i> (DOI: 10.1002/ange.201305402)	125	11981-11985	2013	11.336
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R. L. Paul, J. R. D. Copley, P. Baglioni	Molybdenum-Oxide Keplerate-Type Nanocages.					
M. Martens, J. van Tol, N. S. Dalal, S. Bertaina, B. Barbara, B. Tsukerblat, A. Müller, S. Garai, S. Miyashita, I. Chiorescu	Anisotropy of the Molecular Magnet V_{15} Spin Hamiltonian Detected by High-field Electron Spin Resonance.	<i>Phys. Rev. B</i> (DOI:10.1103/PhysRevB.89.195439)	89	195439	2014	3.736

26. Establishment of New Laboratory

Name of the Laboratory	List of Equipment Available	Sponsoring Agency	Coordinators
Advanced Keplerate Laboratory	Basic Facilities	DST, SERB, NIT Trichy	Dr. Somenath Garai & Prof. Sarat Chandra Babu J

27. Patents Applied/Filed/Accepted

Author(s)	Title of Patent	Country/Patent No/File No	Applying Institute	Year	Accepted
Dr. S. Garai, Prof. M. Drieß, Prof. M. Schwarze, Prof. R. Schomäcker, Dr. P. W. Menezes, M. Groß, A. Acharya	Use of Keplerate type polyoxo-molybdates for decontaminating aquatic environments	European/1371/EP 17195084.3	Technische Universität Berlin	2018	Yes

28. Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number