

## CURRICULUM VITAE



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➤ **Area of Teaching:**

- i) Inorganic Chemistry
- ii) Bioinorganic Chemistry
- iii) Environmental Chemistry

➤ **List of research papers published in National/ International journals:**

- i) A Review on Metal-Organic Frameworks: Synthesis and Applications, **A. Rana**, Asian Journal of Chemistry, **2021**, Vol. 33, No. 2, 245-252.
- ii) The History of Chemistry, **A. Rana**, Indian Science Cruiser, **2020**, Vol. 34, No. 5, 18-21.
- iii) Metal-Organic Frameworks for the Removal of Heavy Metals from Water, **A. Rana**, Prayogik Rasayan, **2020**, 4(4), 1-4.
- iv) Green chemistry and sustainable development, **A. Rana**, Prayogik Rasayan, **2020**, 4(4), 5-10.
- v) Khadye babohrita rasayanic padarthasamuha: manabdehe khatikar pravab, **A. Rana**, Ebong Mohua, February **2020**, pp 287-294.
- vi) Plastic dusan ebang paribeshar upar tar pravab, **A. Rana**, Ebong Mohua, December **2019**, pp 254-259.
- vii) Electrical conductivity and luminescence properties of two silver(I) coordination polymers with heterocyclic nitrogen ligands, **A. Rana**, S.K. Jana, T. Pal, H. Puschmann, E. Zangrando, S. Dalai, *J. Solid State Chem.*, **2014**, 216, 49-55.
- viii) 1D coordination polymers formed by tetranuclear lead(II) building blocks with carboxylate ligands: In-situ isomerization of itaconic acid, **A. Rana**, S.K. Jana, S Datta, R.J. Butcher, E. Zangrando, S. Dalai, *J. Solid State Chem.*, **2013**, 207, 61-68.
- ix) Two new coordination polymers of manganese(II) with O/O- and N/O-donor ligands: Synthesis, structure, luminescence study and thermal behaviour, M. Bera, S. K. Jana, **A.**

**Rana**, D.S. Chowdhuri, D. Hazari, C.-M. Liu, E. Zangrando, S. Dalai, *J. Inorg. Organomet. Polym.*, **2013**, 23, 736-742.

- x) 2D and 1D coordination polymers of Ag(I) ions with 2,6-naphthalenedicarboxylate and N-donor coligands, M. Bera, S.K. Jana, D. Hazari, **A. Rana**, D.S. Chowdhuri, H. Puschmann, E. Zangrando, S. Dalai, *J. Inorg. Organomet. Polym.*, **2013**, 23, 325-332.
- xi) Two new metal-organic coordination polymers of lead with O-, N-donor ligands: Synthesis, characterization, luminescence and thermal behaviour, **A. Rana**, S.K. Jana, M. Bera, D. Hazari, D.S. Chowdhuri, E. Zangrando, S. Dalai, *J. Solid State Chem.*, **2013**, 197, 46-52.
- xii) Synthesis, crystal structure, thermal and photoluminescence properties of Cd carboxylate coordination polymers: a new 2D structure and a reinvestigation of Cd tartrate, D.S. Chowdhuri, S.K. Jana, D. Hazari, M. Bera, **A. Rana**, E. Zangrando, S. Dalai, *J. Coord. Chem.*, **2012**, 65(22), 3960-3971.
- xiii) A New 3D silver(I) coordination polymer with octadentate diglycolate ligand having silver-silver bond, M. Bera, **A. Rana**, D.S. Chowdhuri, D. Hazari, S.K. Jana, H. Puschmann, S. Dalai *J. Inorg. Organomet. Polym.*, **2012**, 22(5), 1074-1080.
- xiv) Synthesis, Crystal Structure, Thermal and Luminescent Characterization of Two New 3D Cadmium-Carboxylate Frameworks, D.S. Chowdhuri, M. Bera, **A. Rana**, D. Hazari, S.K. Jana, E. Zangrando, S. Dalai, *J. Inorg. Organomet. Polym.*, **2012**, 22(5), 963-972.
- xv) Three dimensional silver(I)-thiodiglycolate coordination polymer with weak Ag-Ag bond M. Bera, **A. Rana**, D.S. Chowdhuri, D. Hazari, S.K. Jana, H. Puschmann, S. Dalai, *J. Inorg. Organomet. Polym.*, **2012**, 22(4), 897-902.
- xvi) 3D coordination network of Ag(I) ions with  $\mu_3$ -bridging melamine ligands, **A. Rana**, M. Bera, D. S. Chowdhuri, D. Hazari, S.K. Jana, E. Zangrando, S. Dalai, *J. Inorg. Organomet. Polym.*, **2012**, 22, 360-368.
- xvii) 3D Silver(I)-Diglycolate Coordination Polymer with Short Ag-Ag Bond, M. Bera, **A. Rana**, D.S. Chowdhuri, D. Hazari, H. Puschmann, S. Dalai, *J. Inorg. Organomet. Polym.*, **2012**, 22, 244-252.
- xviii) Synthesis, characterization, luminescent and thermal properties of a hybrid inorganic-organic polymeric framework formed by lead(II) pyridinecarboxylate, **A. Rana**, M. Bera, D.S. Chowdhuri, D. Hazari, R.J. Butcher and S. Dalai, *J. Inorg. Organomet. Polym.*, **2011**, 21, 747-753.
- xix) 3D purely inorganic lead azide coordination polymer constructed by exclusive end-to-end azido binding, **A. Rana**, M. Bera, D.S. Chowdhuri, B.P. Bag, R.J. Butcher and S. Dalai, *J. Mol. Struct.*, **2011**, 990(1-3), 102-109.
- xx) Combination of covalent and hydrogen bonding in the formation of 3D uranyl-carboxylate, Networks, S. Dalai, M. Bera, **A. Rana**, D.S. Chowdhuri and E. Zangrando, *Inorg. Chim. Acta.*, **2010**, 363, 3407-3412.
- xxi) Synthesis, structure and luminescence study of two cadmium(II) coordination polymers with hetero donor ligands: Expansion of network dimensionality from 2D to 3D through hydrogen bonding, S. Dalai, D.S. Chowdhuri, M. Bera, **A. Rana**, N. Guidolin and E. Zangrando, *Inorg. Chim. Acta.*, **2010**, 363, 3700-3705.
- xxii) 3D non porous and thermally labile nickel(II) and manganese(II) complexes with hetero donor ligands: Synthesis, X-ray single crystal structure, thermal and luminescent study, S. Dalai, **A. Rana**, M. Bera, D.S. Chowdhuri and E. Zangrando, *Inorg. Chim. Acta.*, **2010**, 363,

1843–1848.

- xxiii) Cubane-like water clusters in a 3D supramolecular network of zinc with pyridine-2,6-dicarboxylic acid and 5-aminotetrazole, S. Dalai, **A. Rana**, D.S. Chowdhuri, M. Bera, and E. Zangrando, *Inorg. Chim. Acta.*, **2010**, 363, 1052–1055.
- xxiv) 3D zinc(II) coordination polymers built up by triazole and benzene-polycarboxylate anions: Synthesis, crystal structure, thermal and photoluminescence characterization, D.S. Chowdhuri, **A. Rana**, M. Bera, E. Zangrando and S. Dalai, *Polyhedron*, **2009**, 28, 2131-2136.

➤ **Papers presented in Conferences, Seminars, Workshops, Symposia:**

- i) Paper presented in national seminar on “Frontiers in Chemical Sciences 2020 ”dated 8<sup>th</sup> January, **2020** organized by Department of Chemistry, Vidyasagar University, Midnapore
- ii) Paper presented in national seminar on “The Development of Chemistry House on the Pillar of Periodic Table, Celebration of 150<sup>th</sup> Anniversary of Periodic Table” dated 20<sup>th</sup> November, **2019** organized by Department of Chemistry, Prabhat Kumar College, Contai, Purba Medinipur
- iii) Paper presented in international seminar on “Rasayan 3” dated 3<sup>rd</sup> November, **2018** organized by Chirantan Rasayan Sanstha.
- iv) Paper presented in international seminar on “Natural Disaster and its Management” dated 9<sup>th</sup> February, **2018** organized by Department of Physics & Geography, Sabang Sajanikanta Mahavidyalaya, Sabang, Paschim Medinipur
- v) Paper presented in national seminar on “Role of basic sciences in translational research applied on biological sciences and human health” dated 5<sup>th</sup> to 6<sup>th</sup> February, **2018** organized by Department of Biological Sciences, Midnapore City College, Bhadutala, Midnapore, Paschim Medinipur
- vi) Paper presented in national seminar on “Recent Development in Biological Science and Chemical Science” dated 1<sup>st</sup> April, **2017** organized by Department of Chemistry, Botany, Zoology and Physiology, Garhbeta College, Gaarhbeta, Paschim Medinipur.
- vii) Paper presented in national seminar on “Chemistry Today-Nanoworld to Macroworld” dated 22<sup>nd</sup> to 23<sup>rd</sup> December, **2016** organized by Department of Chemistry, Sonamukhi College, Sonamukhi, Bankura.
- viii) Paper presented in national seminar on “Recent Trends in Research in Chemical Sciences” dated 30<sup>th</sup> August, **2016** organized by Department of Chemistry, Ghatal Rabindra Satabarsiki Mahavidyalaya, Ghatal, Paschim Medinipur.
- ix) Paper presented in national seminar on “Chemistry and its Interface with other Scientific Disciplines” dated 12<sup>th</sup> December, **2014** organized by Department of Chemistry, Sitananda

College, Nandigram, Purba Medinipur.

- x) Paper presented in national seminar on “Chemistry for Better Tomorrow-Current Trends and Opportunity” dated 2<sup>nd</sup> to 3<sup>rd</sup> December, **2014** organized by Department of Chemistry, Sidho Kanho Birsha University, Purulia.
- xi) Paper presented in national seminar on “Chemistry for Life & Future” dated 30<sup>th</sup> to 31<sup>st</sup> March, **2012** organized by Department of Chemistry, Ramananda College, Bishnupur, Bankura.
- xii) Paper presented in national seminar on “Useful and Harmful Effects of Polymers in our Society” dated 21<sup>st</sup> November, **2011** organized by Department of Chemistry, Garhbeta College, Garhbeta, Paschim Medinipur.
- xiii) Paper presented in international seminar on “Recent Trends of Research in Chemistry(RTRC-2011)” dated 31<sup>st</sup> October to 1<sup>st</sup> November, **2011** organized by Department of Chemistry, Midnapore College, Midnapore, Paschim Medinipur.

#### **List of Books/chapters in book published:**

- i) Prof. Asima Chatterjee: Contributions to the Chemistry, “Contributions of Indian Women to Science”, **A. Rana**, pp 79-85, 17<sup>th</sup> October, **2020** [ISBN: 978-93-84387-75-4] published by Scientific world.
- ii) Biological applications of MOF: a Review, “Chemistry and Biology: Sustainable Progress of Human Civilization”, **A. Rana**, pp 1-17, 22<sup>nd</sup> October, **2020** [ISBN: 978- 93-84387-76-1] published by Scientific world.
- iii) Therapeutic Applications of Transition Metal Complexes, “Recent Advancement in Therapeutic Use of Chemical Compounds and Drug Delivery”, **A. Rana**, pp 19-34, November, **2020** [ISBN: 978-9-390785-16-2] published by Walnut Publication.
- iv) Tea and Coffee Consumption and Risk of Stroke: A Short Review, “Chemistry Today- Nanoworld to Macroworld” **A. Rana**, pp 47-50, December, **2016** [ISBN: 978-81-930138-2-3] published by Sonamukhi College, Sonamukhi, Bankura.
- v) Silver(I) coordination polymers with N- and O- donor ligands: an overview, “Recent Trends in Research in Chemical Sciences” **A. Rana**, pp 164-173, August, **2016** [ISBN: 978-93-5267-187-8] published by Ghatal Rabindra Satabarsiki Mahavidyalaya, Ghatal, Paschim Medinipur.