

## Database for Scientists (Gr.IV)

1. **Name of Scientist:** Dr. Vallu Ramakrishna
2. ID No. of the Employee both Internal ID: 770
2. Name of Research Group: Coal Characterization Research Group
3. Date of Birth: June 1<sup>st</sup> 1982
4. Date of Joining CSIR-CIMFR: 12<sup>th</sup> May, 2016
5. Present Position: Scientist Gr IV (2)
6. Educational Qualification after+2 with subject, year of Passing, Name of University/ Institute



Sl. No.	Degree/ Certificate	Year of Passing	University/ Institute	Subjects
I	B. Sc.	2004	Andhra University	Biology and Chemistry
II	M. Sc.	2008	Banaras Hindu University	Chemistry
III	Ph. D.	2015	CSMCRI-CSIR	Supramolecular chemistry
IV	Scientist (CSIR-CIMFR)		From 2016 to till date	

7. **Area of specialization:** Coal Characterization, Analytical Chemistry & Supramolecular Chemistry.
8. **Area of present Research:** Physico-chemical characterization of coal and biomass and their blends.
9. **Professional Career:** Research
10. **Awards/ Recognition:** CSIR-SRF awarded by CSIR-India  
Qualified for Graduate Aptitude Test in Engineering (GATE) in 2008
11. **List of Publications in SCI Journals with full details (No reprint):**
  1. **Synthesis, crystal structures and competitive binding property of a family of functionalized calix [4] arene ionophores.**

**Vallu Ramakrishna**, Subrata Patra, E. Suresh, Anjani K. Bhatt, Pragnya A. Bhatt, Amjad Hussain and Parimal Paul\*, *Inorg.Chem.Commun.* 22, 85-89, 2012.

2. **Synthesis, crystal structures and competitive binding property of a family of calix[4]arene-biscrown-5/6 and their application in extraction of alkali metal ions from sea bittern.**

**Vallu Ramakrishna**, E. Suresh, V. P. Boricha, Anjani K. Bhatt, and Parimal Paul\* *Polyhedron* 101, 65–77, 2015.

3. **Synthesis, crystal structures and competitive complexation property of a family of calix-crown hybrid molecules and their application in extraction of potassium from bittern.**

**Vallu Ramakrishna**, E. Suresh, V.P.Boricha Anjani K. Bhatt, and Parimal Paul\* *Supramolecular Chemistry*, Vol. 27, No. 10, 706 –718, 2015.

4. **Colorimetric and fluorimetric detection of Hg<sup>2+</sup> and Cr<sup>3+</sup> by boronic acid conjugated rhodamine derivatives: Mechanistic aspects and their bio-imaging application in bacterial cells.**

**Ramakrishna Vallu**, Krishna Velugula, Sejal Doshi, Jugun Prakash Chinta\* *Spectrochimica Acta Part A: Molecular and Bimolecular Spectroscopy* 189 (2018) 556–562.

5. **Chemistry of  $\mu$ -Oxo-bis ( $\mu$ -acetato) diruthenium (III) complexes: kinetics and synthetic studies.**

**Vallu Ramakrishna**, E. Suresh, Anjani K. Bhatt, D. Krishna Kumar, Parimal Paul, Amjad Hussain\* (*manuscript under preparation*)

6. **Synthesis and competitive binding property of calix[4]arene incorporated alizarin crown-6 as an ionophore.**

**Vallu Ramakrishna**, Anjani K. Bhatt, and Parimal Paul\* (Manuscript under preparation)

#### **Papers presented in Conferences/ Symposium:**

1. **International Conference on structural and Inorganic Chemistry (ICSIC-2014)** at Department of chemistry at CSIR-NCL, Pune on December 04-05, 2014.

**2. Symposium on Modern trends in Inorganic Chemistry-XV (MTIC-XV) at** Department of chemistry, Indian institute of Technology Roorkee on December 13-16, 2013.

**3. International Conference on Supramolecules and Nanomaterial's-Research and Applications (ICSNA 2012) at** Department of chemistry, Gujarat University, Ahmadabad on February 6-8, 2012.

**(a) In Journals (Indian & International with impact factor):** 4

**(b) Books/Monographs:** No

**12. Patents filed & granted (India & International):** No

**13. Projects (GAP/SSP/CNP) Completed and Ongoing (More than 10 Lakhs) for last 10 years:** No

**14. Significant Contribution and achievement in your field of Research (Max. 100 words):**

My doctoral Research at CSIR-CSMCRI (Central Salt and Marine Chemicals Research Institute), India, comprises of selective recognition and extraction of alkali & alkaline earth metal ions, and sensing of toxic metal ions using fluorescent receptors.

Extraction and sensing of alkali and alkaline earth metal ions from sea bittern is a potential area of research because of their role in various biological and clinical processes, in the recovery of value added products for various applications as well as environmental point of view. Potassium is used as fertilizer and hence country like India, which is most economic tool for agriculture. In order to achieve extraction of alkali and alkaline earth metal ions which are present in sea bittern, we have developed various calixarene functionalized crown ethers such as calix-crown-4, 5, & 6. So Thus overall achievements in the area of metal extraction and sensing/recognition lead to several publications in both peer reviewed national and international journals and some of them are under the preparation stage.

**15. PhD Supervisions:** No

**16. Ongoing Project:** Physicochemical characterization of low rank coal, coal, Biomass and their blends.