

Major Research Interests

Studies in the Synthesis, Evaluation and Applications of Novel Calix[4]arenes and Thiocalixarene Derivatives

List of Publications

34. Selective Colorimetric Sensing of Cyanide Ions Over Fluoride Ions by Calix[4]arene Containing Thiourea Moieties. J. Nagendra Babu, Vandana Bhalla, **Manoj Kumar** and Hardev Singh **Letters in Organic Chemistry**, accepted 2006.
33. Calix[4] derivatives: Efficient Ionophores for silver (I) Ion Sensors. Rkaesh K Mahajan, Inderpreet Kaur, Ravneet Kaur, Vandana Bhalla and **Manoj Kumar**, **Bull. Chem. Soc. Jpn.**, 2005, 78(9), 1635.
32. Synthesis and Binding Studies of Novel bistiocalix[4]arenes with diimine linkages. Vandana Bhalla, **Manoj Kumar**, Hiroshi Katagiri, Tetsutaro Hattori, Sotaro Miyano, **Tetrahedron Lett.**, 2005, 46, 121.
31. Zinc mediated synthesis of a new heteroditopic ligand with hard and soft sites. Narinder Singh, Manoj Kumar, Geeta Hundal, **Inorg. Chim. Acta.** 2004, 357, 4286.
30. Stereoselective Synthesis of all Isomers of Bis(O aminoethyl)thiocalix[4]arenes. Vandana Bhalla, Manoj Kumar, Tetsutaro Hattori and Sotaro Miyano, **Tetrahedron** 2004, 60, 5881.
29. Synthesis, NMR, X-ray Structural Analysis and Complexation Studies of New Ag⁺ Selective Calix[4]arene based Dipodal Hosts- a Co-complexation of Neutral and Charged Species. Narinder Singh, **Manoj Kumar** and Geeta Hundal, **Tetrahedron** 2004, 60, 5393.
28. Mercury(II) Ion Selective Electrode based on *p-tert*-Butylcalix[4]crown with Imine Units. R.K. Mahajan, Manoj Kumar, Vandana Sharma nee Bhalla and Ravneet Kaur. **Analytical Sciences** 2004, 20, 811.
27. Interconversion between *syn* and *anti* Conformations of 1,3-Bis(*O*-cyanomethyl)-*p-tert*-Butylthiocalix[4]arene. Vandana Bhalla, **Manoj Kumar**, Chizuko Kabuto, Tetsutaro Hattori, and Sotaro Miyano, **Chem. Lett.**, 2004, 33, 184.
26. Synthesis and Binding Studies of New Bis-calix[4]arenes Containing Aromatic and Heteroaromatic units. **Manoj Kumar**, Vandana Sharma nee Bhalla and J. Nagendra Babu **Tetrahedron**, 2003, 59, 3267.

25. Thiosemicarbazones of Silver(I): Synthesis, Spectroscopy and Reactivity towards triphenylphosphine. T.S. Lobana, Gaurav Bhargav, Vinay Sharma and **Manoj Kumar**, *Ind. J. Chem., Sec.A* 2003, **42**, 309.
24. Silver Ion Selective Electrodes Employing Schiff base *p-tert*-Butylcalix[4]arene Derivatives as Neutral Carrier R. K. Mahajan, **Manoj Kumar** and Inderpreet Kaur, *Sensors and Actuators*, 2003, 6918.
23. Sensor for Silver(I) ion selective electrode based on Schiff base *p-tert*-butylcalix[4]arene. R.K. Mahajan, **Manoj Kumar**, V.Sharma and I.Kaur, *Sensors*, 2002, 2, 417.
22. A new Cesium Selective electrode based on Calix[4]crown ether-ester. R. K. Mahajan, **Manoj Kumar**, Vandana Sharma nee Bhalla and Inderpreet Kaur, *Talanta*, 2002, 445.
21. Synthesis of New Cryptands Containing 1-Methyl or 1-hexadecylpyrazole. **Manoj Kumar** and Vandana Sharma nee Bhalla and J. Nagendra Babu *J. Inclu. Phenom. and Macrocyclic Chem.* 2002, 3(4), 247.
20. Synthesis of New Schiff Base *p-tert*-Butylcalix[4]arenes with Imine Units Spanning 1,3-Distal Positions on the Lower Rim. **Manoj Kumar**, V. Sharma nee Bhalla and N, Sharma, *Ind. J. Chem.*, 2002, **41B**, 1290.
19. Cu²⁺- Induced formation of cage-like compounds containing pyrazole macrocycles. F. Escarti, C. Miranda, L. Laramaque, J. Latorre, E. Garcia-España, **M. Kumar**, V.J. Aran and P. Navarro, *Chem. Comm.*, 2002, 936.
18. Synthesis of New bis-Calix[4]arene with Imine Units. A Search for New Silver(I) Selective Sensors. **Manoj Kumar**, R. K. Mahajan, V.Sharma nee Bhalla, N. Sharma, H. Singh and I. Kaur, *Tetrahedron Lett.*, 2001, **42**, 5315.
17. Silver (I) Ion Selective Membrane based on *p-tert*- Butylcalix[4]arene. R.K. Mahajan, **Manoj Kumar**, Vandana Sharma (nee Bhalla) and Inderpreet Kaur, *The Analyst*, 2001, 126, 505.
16. Synthesis of New Macrocyclic Polyaza compounds containing 1-methylpyrazole. **Manoj Kumar**, Vandana Sharma (nee Bhalla), Virinder Kumar, Mangal Singh and Gurmit Singh, *J. Inclu. Phenom. and Macrocyclic Chem*, 2001, 241-245.
15. Synthesis of *p-tert*-Butylcalix[4]arenes with Diester Bridge Spanning the 1,3-(Distal) Positions on the Lower Rim. **Manoj Kumar** and Vandana Bhalla, *Supramolecular Chemistry*, 2001, 391.

14. Potentiometric Studies on the Chelation of Pyrazole-3,5-dicarboxylic acid with Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb in Dioxane Medium. R. K. Mahajan, **Manoj Kumar**, Vandana sharma nee Bhalla and Anu. *J. Electrochem. Soc. India* 2001, 50(2), 83.
13. Synthesis New Calix(aza) and Calix(aza-thia) Crowns. **Manoj Kumar** , Vandana Bhalla and Punita Sharma, *J.Chem. Res.(S)*, 2000, 492.
12. Crystal Structure of Calix[4]Crown Ether-Ester and Molecular Recognition of Alkyl- and Arylalkylamines. **Manoj Kumar**, Geeta Hundal, Vandana Bhalla, Madhu and Mangal Singh *J. Inclu. Phenom. and Macrocyclic Chemistry*, 2000,461.
11. Synthesis and Protonation Behaviour of 26-Membered Oxaaza and Polyaza Macrocycles Containing Two Heteroaromatic Units of 3,5-Disubstituted Pyrazole or 1-Benzylpyrazole. A Potentiometric and ¹H NMR and ¹³C NMR Study. V. J. Aran, **Manoj Kumar**, J. Molina, L. Lamaraque, P. Navarro, E. Garcia-Espana, J.A. Ramirej, S. V. Luis and B. Escuder, *J. Org. Chem.*, 1999, 64, 6135.
10. The acidity of calix[5]arenes and their linear analogues. Christian Schmidt, **Manoj Kumar**, and W. Vogt V.Boehmer, *Tetrahedron* 1999, **55**, 7819-7828.
9. New Macrobicyclic Polyamines of 3,5-Disubstituted N1H Pyrazole able to form Di and Tetra-Nuclear complexes of Cu²⁺ and or Zn²⁺ as Neutral and /or Anionic Ligand. **Manoj Kumar**, Vicente J. Aran and P. Navarro, *Tetrahedron Lett.* 1995, **36**, 2161.
8. Dinuclear Cu(II) Complexes with Pyrazolate Bridging Groups Formed from 26-membered Oxamine and Polyamine Macrocycles of 3,5-Disubstituted 1H-Pyrazole. **Manoj Kumar**, V. J. Aran, P. Navarro, A.Ramos-Gallardo and A. Vegas. *Tetrahedron Lett.* 1994, **35**, 5723.
7. New Macrocyclic Polyamines of 3,5-Disubstituted 1H-Pyrazole. A¹³C NMR Study of Deprotonation and Formation of Zn²⁺ Dinuclear Complexes. **Manoj Kumar** Vicente J. Aran and Pilar Navarro, *Tetrahedron Lett.* 1993, **34**, 3159.
6. Synthesis of Sulphur containing Macrocycles and their Ionophore Character. Harjit Singh, **Manoj Kumar**, Paramjit Singh and Subodh Kumar, *Ind. J. Chem.* 1991, **30B**, 237.
5. Synthesis of Macrocyclic Ester: Solid-Liquid Phase Transfer Catalysed condensation of Diacid halides and Diols. Harjit Singh, **Manoj Kumar** and Paramjit Singh, *J. Chem. Res(S)*1989, 94. (M) 0675-0688.

4. Ionophore Character of 18-crown-6: Effect of Co-anion and Peripheral Incorporation of Sulphur and Ester Moieties. Harjit Singh, **Manoj Kumar**, Paramjit Singh and Subodh Kumar, *J.Inclusion Phenomena and Molecular Recognition in Chemistry*, 1989, 7 (3), 333.
3. Synthesis of Macrocyclic Ether-Ester Lactones and their Ionophore Character., Harjit Singh, **Manoj Kumar**, Paramjit Singh and Subodh Kumar. *J. Chem. Res(S)*, 1988, 132.
2. Synthesis of Oxygen and Sulphur containing Crown Compounds under Solid-Liquid Phase Transfer Conditions. Paramjit Singh, **Manoj Kumar** and Harjit Singh., *Ind. J. Chem.* **1987**, **26B**, 861.
1. Synthesis of Medio and Macrocyclic Lactones and Ether Lactones under Phase Transfer Conditions. Paramjit Singh, **Manoj Kumar** and Harjit Singh., *Ind. J. Chem.* 1987, **26B**, 64.