



## UNIVERSITY GRANTS COMMISSION, SERO, HYDERABAD

### METAL- BASED BIOLOGICALLY ACTIVE COMPOUNDS – SYNTHESIS, PHARMACOLOGICAL STUDIES AND CATALYTIC ACTIVITY OF NOVEL TRANSITION METAL COMPLEXES WITH HYDRAZINE AS COLIGAND

PI: **Dr. N. Arunadevi, Chemistry**

Co PI: **NIL**

Amount Sanctioned: **Rs.1,65,000**

Year: **January 2015**

#### Project outcomes:

- ❖ Transition metal complexes of 3-hydroxy-2-naphthoic acid and 3,5-dihydroxy-2-naphthoic acid with hydrazine was synthesized for the first time and characterized by using various physico-chemical techniques.
- ❖ Octahedral geometry was suggested for all the complexes with coordination six.
- ❖ Among the synthesized complex the Nickel complex shows more activity against both Escherichia coli bacteria and Aspergillus fumigates.
- ❖ The hydrazine metal complexes are used as precursors for synthesis of nano metal oxides which was confirmed by SEM, TEM studies.
- ❖ The average sizes of the metal oxides were about 0-20 nm in size, which was confirmed by SEM, TEM and EDAX studies.

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#### ❖ Publications: 3

1. **N. Arunadevi**, "Transition metal complexes of 3, 5-dihydroxy-2-naphthoic acid and its nano metal oxides: Synthesis and Characterization", Asian Journal of Chemistry, Volume 29, No. 8, 2017.
2. **N. Arunadevi**, "Synthesis, Characterisation and antimicrobial studies of novel hydrazine complexes with 2-hydroxypyridine -3-carboxylic acid", International Journal of Scientific research, Volume 4, Issue 11, Page No. 174-177, November 2015.
3. **N. Arunadevi**, "Hydrazine Complexes of Metal Hydroxy Naphthoates – New precursors for metal oxides" International Education and Research Journal, Vol 3, Issue 6, May 2017.

❖ **Conference/ Seminar/ Workshop: 5**

1. **N. Arunadevi** presented a paper entitled “New transition metal complexes of naphthoic acid and hydroxy naphthoic acid with hydrazine – Preparation, Spectroscopic and Thermal studies” at National Seminar on ‘The widening Horizons of Chemistry’ organized by APA College for Women, Palani (5.3.2015).

2. **N. Arunadevi** presented a paper entitled “Preparation of Nano metal oxides from Hydrazine Complexes” at National Conference on ‘Development in Inorganic Applications’ organized by Periyar University, Salem (15 & 16.10.2015).

3. **N. Arunadevi** presented a paper entitled “New metal complexes of 2- hydroxynicotinic acid with hydrazine –Preparation, Spectroscopic and Thermal studies ” at National Conference on ‘Advances in Environmental, Synthetic and Medicinal Chemistry’ organized by Karpagam University, Coimbatore (5 & 6.4.2016).

4. **N. Arunadevi** presented a paper entitled “Preparation, Characterization and antimicrobial activity of three new divalent transition metal complexes using of 2-hydroxynicotinic acid and Hydrazine” National Conference on ‘Developing scenario in applied sciences’ and communicative English’ organized by Kumaraguru College of Technology, Coimbatore (21 & 22.4.2016).

5. **N. Arunadevi** attended National Seminar on ‘Vision Nano 15’ organised by Department of Nanotechnology, Sri Ramakrishna Engineering College, Coimbatore on 21.2.2015.

❖ Books: NIL

❖ Any other achievements: NIL

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