

VOLUME - VIII, ISSUE - I- JANUARY - MARCH - 2019

AJANTA - ISSN 2277 - 5730 -IMPACT FACTOR - 5.5 (www.sjifactor.com)

## 22. Synthesis, Physicochemical and Photoluminescence Studies of p-Toulidine-Ethylenediamine-Formaldehyde Copolymer Metal Complex

Chetana G. Kohad and Wasudeo B. Gurnule

Department of Chemistry, Kamla Nehru Mahavidyalaya, Sakardara, Nagpur, Maharashtra, India.

### Abstract

The present paper reports synthesis of Copolymer resin and its metal complexes. Copolymer resin (p-TEDF) has been synthesized by condensation of p-toulidine and ethylenediamine with formaldehyde in the presence of 2M HCL as a catalyst at  $124 \pm 2^\circ\text{C}$  for 5 hrs with molar proportion of reactants. The copolymer metal complexes have been synthesized using the synthesized copolymers as ligand with few transition metal ions such as  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$  and  $\text{Zn}^{2+}$  ions in 2:1 molar ratio. The reaction has been carried out with an effective reflux at  $60^\circ\text{C}$  for 3h. The photoluminescence properties of newly synthesized copolymer metal complex samples were recorded on RF-501 (PC) S CE (LVD) MODEL. The aim of this present study is to development of new polymeric to investigate its photo luminescent property and significant contributions from active researchers in the field. The composition of copolymer resin has been determined on the basis of elemental analysis. The number average molecular weight of this resin was determined by non-aqueous conductometric titration. The copolymer (p-TEDF) was characterized by FT-IR,  $^1\text{H}$ -NMR Spectroscopy.

### 1. Introduction

The synthesis of copolymer has stimulated an enhanced interest in recent years due to their wide applications. During the past several decades, there is an enormous demand for fluorescent materials, and research on fluorescent polymers has gathered great scientific attention because of their engrossing properties and important application in the fields of materials and life science. The latest research progress in fluorescent polymers is focused on the formation and photoluminescence of fluorescent polymers with new architecture. Various methods of design and synthesis of fluorescent polymers have also been developed. Fluorescent polymers can be