

## Synthesis and Applications of Fluorescent Poly (Coumarin-Triazole) for Metal Ion Sensing

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Over the past few years, several analytical techniques for the determination of metal ions have been developed. These include spectrophotometry, inductively coupled plasma mass spectrometry (ICP-MS), inductively coupled plasma atomic emission spectrometry (ICP-AES), voltammetric, atomic fluorescence spectrometry (AFS), cold vapor atomic absorption spectroscopy (CV-AAS) and neutron activation analysis. The disadvantages of these methods is that, they require expensive instruments, well-controlled experimental conditions, time consuming and complicated sample preparations.<sup>1</sup> On the other hand, the use of chemosensors has attracted a great deal of attention due to their simplicity and selective for the detection of metal ions.

The application of fluorescent conjugated polymers as chemosensors for metal ions has been a powerful tool in the recent years<sup>2</sup>. The use of these chemosensors have attracted considerable attention due to their ability to detect metal ions at very low concentrations<sup>3</sup>

In this study, fluorescent poly (coumarin-triazole) **A** and **B** in figure 1 were prepared in excellent yields by a well-established Cu(I)-catalysed click polymerization. The application of these novel polymers as chemosensors was investigated using a range of metal ions.

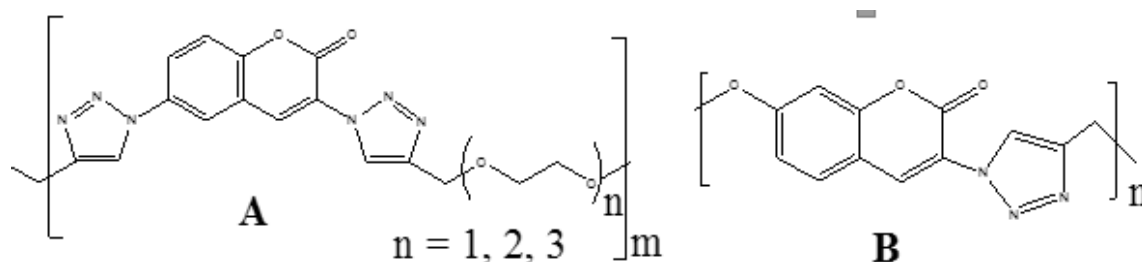


Figure 1: General structures of polytriazole **A** and **B**.

### Biography:

Dr Neliswa Mama is a Senior Lecturer in the Department of Organic Chemistry at Nelson Mandela University, South Africa. She received her PhD in Chemistry from Nelson Mandela Metropolitan University in 2007. She completed her postdoctoral fellowship at the University of Stellenbosch under Professor Bert Klumperman. Her research interests include, asymmetric synthesis, synthesis of fluorescent polymers and applications of chemosensors for metal ions.