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The importance and applications of Schiff bases

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Schiff bases are active against a wide range of organisms since they play an important role in living organisms, such as decarboxylation, transamination and C-C bond cleavage. Decarboxylation and transamination are of importance in the biosynthesis of hormones, neurotransmitters and pigments. The chemistry of polymer-based macromolecules including Schiff bases has been receiving significant attention as one of the promising immobilization alternatives for biopolymer biosensors in various industry areas. Furthermore, the coordinating ability of the metal within the polymer-based macromolecules permits these materials to act as sensors. Particularly, although studies on enzyme immobilization of the polymer-based macromolecules including metal atoms (Si, Se, etc.) on transition metal does not show this. In fact, polymer attached metals which have a coordination capability may bond with -NH and -COOH groups of the enzyme. My work is becoming ever more diverse on this issue. On the other hand, it is exciting to synthesize the various ligands and complexes for me. Because, ligands and complexes that include sulfur and nitrogen have wide applications for the synthesis of drugs. Therefore, there is considerable interest in the synthesis and characterization of these compounds. As we know, drug resistances against antibacterial agents may be a problem in their use for medical purpose. The problem may be overcome by the preparation of metal complexes, using a process of chelation with the coordination of transition metal ions. Schiff bases have N atoms as their basic elements. Schiff base derivatives containing donor atom can act as good chelating agents for the transition of metal ions. Research shows that, Schiff bases and their metal complexes have been widely studied due to their important antiparasitic, fungicidal-bactericidal, and anticancer properties.

Biography

Nurşen Sari got her master degree in Analytic Chemistry on Stability constants of some amino acids. In December 1999, she got her PhD degree in Inorganic chemistry. The research project is the synthesis, structural characterization of new amino acid-Schiff bases and their Co(II), Cu(II) and Ni(II) complexes. Since 2003, she teaches Inorganic Chemistry, Coordination Chemistry and Metal Chemistry to undergraduate students. She has set up the inorganic and coordination polymer laboratory and biocatalysis by means of Gazi University Scientific Research Projects fund. Now her ongoing research is focusing on inorganic polymer attached Schiff bases and metal ions and biocatalysis.

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