

PP-43

**Synthesis and biological activities of Carbohydrate based hetero-conjugates
by using azide-alkyne [3+2] cycloaddition reaction.**

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Abstract :-

Click chemistry reactions are useful for the synthesis of triazole based multidentate chelating systems having biological activities. The present review is focused on the recent advances concerning non-catalytic and catalytic azide-alkyne conjugation in carbohydrate field. Many methodologies for synthesis of biologically active compounds are associated with long reaction time, high temperature, low yields and occurrence of several side products but click reactions overcomes these conditions because click reactions are regiospecific, easy to purify, occurs at pH 3-12, at room temperature and generally within an hour. There is continuous need for development of new drugs as currently available drugs are becoming ineffective due to drug resistance developed by pathogens. This necessitates continuing research into new compounds of 1,2,3-triazoles having biological activities.

OP- 04

Structural, morphological, and gas sensing properties of zinc ferrite ZnFe₂O₄ nanoparticle prepared by chemical co-precipitation method

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Abstract:

In the present study, polycrystalline zinc ferrite nanopowders having general formula ZnFe₂O₄ have been synthesized by chemical co-precipitation method using high purity analytical grade nitrates and n-hexadecyl-trimethyl ammonium bromide (CTAB) as surfactant. The structural and morphology of the prepared ferrite nanoparticles were investigated using X-ray diffraction studied (XRD), Fourier Transform Infrared Radiation (FTIR), Scanning electron microscopy (FE-SEM), and Transmission electron microscopy (TEM). The X-ray diffraction analysis confirms the formation of single phase cubic spinel structure and crystallite size was 12 nm. The prepared ferrite appeared as nearly spherical nanoparticles with a particle size 0.23 μm as confirmed using FE-SEM. The thick film of nanocrystalline ZnFe₂O₄ sensor was tested for NO₂, CO₂, NH₃, and Cl₂ gases. The sensitivity was measured at various operating temperatures in the range of 100-400°C. The sensor shows highest sensitivity at operating temperature 200°C for NO₂.

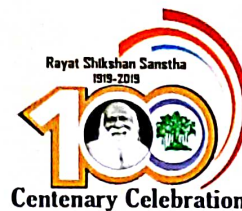
Keywords: Chemical synthesis, Spinel structure, grain size, thick film, sensitivity.

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