

## Spin coated Copper phthalocyanine films for room temperature odour sensing applications

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Hazardous effects of odour on environment and biological system makes it one of the important pollution issue. A number of techniques have been used for the detection of odour gases. In this direction, films of Copper Phthalocyanine (CuPc) (fig. 1) has been prepared by low cost spin coating technique under different experimental conditions on glass substrate and systematically studied for structural properties using FESEM, AFM and XRD techniques. Based upon these investigations, highly porous samples are selected for the detection of different primary amines. Various sensing parameters like sensitivity, selectivity, response and recovery times have been determined. Observations reveal that these gas sensors show an extreme high response to few parts per million level of primary amines with response time of 5 min. The interaction between sensor and analytes follows first order kinetics with rate constant  $0.4 \leq k \leq 0.6$ . This chemiresistive sensor shows very good stability at room temperature over a long period of time. The adsorption of analytes at film surface obeys the Elovich equation and a linear variation has been observed between analyte concentration and response rate.

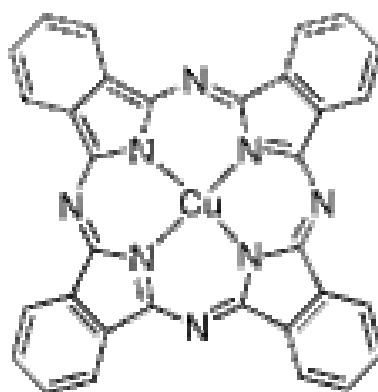


Fig.1 Molecular structure of CuPc molecule