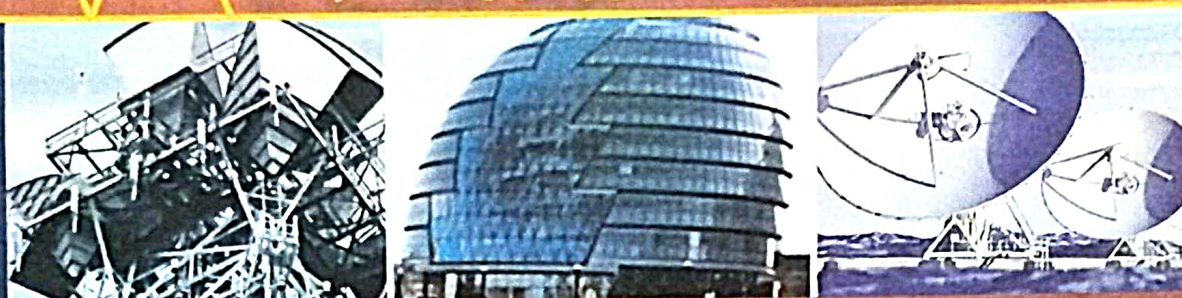


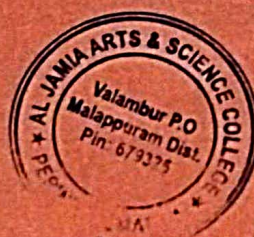
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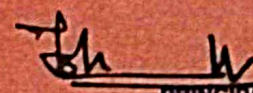
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Soft Computing and Signal Processing

Proceedings of 5th ICSCSP 2022




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A 3D Designed Portable Programmable Device Using Gas Sensors for Air Quality Checking and Predicting the Concentration of Oxygen in Coal Mining Areas



M. Aslamiya , T. S. Saleena , A. K. M. Bahalul Haque ,
and P. Muhamed Ilyas

1 Introduction

Air pollution has become one of the main threats to the entire living thing. Today, the air is getting polluted by various hazardous gasses. The main substances which cause air pollution are CO₂, NO₂, CO, Ozone, Lead, SO₂, etc. [1]. Ingestion of such polluted air leads to many health problems and respiratory disease and reasons for low birth rate, etc. [2, 3]. Health effects on cities like Delhi in India have rapid growth in the cases of diseases such as cancer, asthma, respiratory diseases, headache, eye/skin irritation. Many researches and studies proved that pollutant air creates many problems on the health of people [4–6]. Coal is the main energy source of many countries such as India [7]. Coal mining has a key role in the emission of methane in air [8]. The increased demand of coal eventually causes the production of methane in large amounts. The main source of anthropogenic methane emission is coal mines. The coal mining construction measures approximately 11% of global methane from the activities of humans [9]. The emission of methane during the coalification process

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