## ABSTRAK

**Rancang Bangun Sistem Pemantau Suhu Kelembaban Konsentrasi Gas Metan Pada Tanaman Padi**

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Lahan sawah dengan kondisi tergenang (*anaerob*) merupakan salah satu sumber emisi gas metan ($CH_4$) terbesar. Diketahui bahwa tanaman padi berperan aktif dalam pelepasan emisi gas metan ke atmosfer. Lebih dari 90% metan diemisikan melalui jaringan parenkim dan ruang interseluller tanaman padi, sedangkan kurang dari 10% sisanya melalui gelembung air. Salah satu upaya yang dilakukan untuk mengatasi permasalahan diatas, yaitu dengan membuat sebuah alat ukur pemantau gas metan suhu dan kelembaban pada tanaman padi. Didapatkan data hasil pengujian dengan rata-rata suhu 40,96$^0$C dan rata-rata kelembaban 40,82% sedangkan rata-rata gas metan 9396 *ppm* (*part per million*). Berdasarkan data yang didapat bahwa perubahan suhu dan kelembaban juga sangat mempengaruhi gas metan yang ada pada tanaman padi.



Kata kunci : Tanaman Padi, sensor gas metan, sensor suhu, sensor kelembaban, Arduino UNO

## ABSTRACT

**Design of Temperature Monitoring System for Humidity Concentration of Methane Gas in Rice Plant**

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Flooded rice field (anaerobic) is one of the largest methane gas (CH4) emission sources. It is known that rice plants (oriza sativa) play an active role in the release of methane gas emissions into the atmosphere. More than 90% of methane is emitted through parenchymal tissue and interseluller space of rice plants, while less than 10% of the remainder pass through water bubbles. One of the efforts made to overcome the problem above, namely by making a monitoring device as methane gas temperature and humidity measurement for rice plant. Test result on the first day with average temperature 40,96$^0$C and average humidity 40,82% mean methane gas 9396 ppm ( Part per million). Based on the data obtained that changes in temperature and humidity also greatly affect the existing methane gas in rice plants.



Keywords: Rice plant, methane gas sensor, temperature sensor, humidity sensor, Arduino UNO