

## DESIGN OF DRAINAGE PIPE INTELLIGENT INSPECTION VEHICLE BASED ON THE ARDUINO PLATFORM

*Xinqi Xu<sup>1</sup>, Yujun Gu<sup>1</sup> & Sixian Hou<sup>1</sup> and Haoyan Wang<sup>2</sup>*

<sup>1</sup>*Research Scholar, Guangdong University of Petrochemical Technology, Maoming, People's Republic of China*

<sup>2</sup>*Research Scholar, Sinopec Maoming Petrochemical Company, Maoming, People's Republic of China*

**Received: 30 Nov 2023**

**Accepted: 15 Dec 2023**

**Published: 26 Dec 2023**

### **ABSTRACT**

*Urban drainage systems rely heavily on drainage pipes for efficient operation. Regular inspections and maintenance are necessary to ensure optimal functioning. However, due to their complex underground structure and hazardous internal conditions, manual inspections are inefficient and dangerous. One of the most effective solutions for inspecting drainage networks is the use of pipe inspection robots. Based on the characteristics and requirements of pipeline inspection, an intelligent inspection vehicle was designed using Arduino UNO R3 as the main control system. Through the functionality and development of the Arduino platform, the intelligent inspection vehicle for drainage pipes has a compact and functional overall structure, indicating promising application prospects.*

**KEYWORDS:** *Drainage Pipe, Arduino, Intelligent Inspection Vehicle*