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(57) Abstract :
“ADVANCED OPTICAL SYSTEM FOR ENVIRONMENTAL MONITORING” The present invention provides an advanced optical system for environmental monitoring that introduces advanced optical sensors for environmental monitoring applications, leveraging photonics technologies to detect and measure various environmental parameters such as air quality, water pollution, and greenhouse gas emissions. The system includes a plurality of environmental parameters monitoring sensors, one or more electronic devices, a control station, a data collector, and a microprocessor. The environmental parameters monitoring sensors monitor one or more environmental parameters. The microprocessor is connected to the single-path optical fiber transceiver. The plurality of environmental parameters monitoring sensors includes a methane sensor, temperature sensor, humidity sensor, and vibration sensor; methane sensor, temperature sensor, humidity sensor, and vibration. The station includes an alarm module, and the alarm module includes the buzzer of the distributed remote detection subsystem. Figure 1

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