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(57) Abstract :
The proposed invention is a nanorobotic arm specifically designed for endoscopy, a minimally invasive medical procedure. The nanorobotic arm operates at the nanoscale and consists of a network of specialized robotic components, enabling precise manipulation and interventions within the body. Its miniaturized size allows for access to narrow passages and delicate structures without causing significant disruption to the patient. The arm incorporates nanosensors that provide real-time feedback on parameters such as pressure, temperature, and chemical composition, enhancing the surgeon's situational awareness during the procedure. Advanced imaging systems enable high-resolution visualization of internal structures, aiding in accurate navigation and interventions. The arm can operate autonomously or semi-autonomously through the integration of artificial intelligence and machine learning algorithms, adapting and optimizing its movements based on previous procedures and real-time feedback. The proposed nanorobotic arm has vast applications in endoscopy, including biopsies, tissue ablation, drug delivery, and complex surgeries within various organ systems. This innovative technology has the potential to revolutionize endoscopic procedures by offering unparalleled precision, control, and access, ultimately improving patient outcomes in minimally invasive medicine. Accompanied Drawing [FIGS. 1-2]

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