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(57) Abstract :

ABSTRACT AI BASED ROBOTIC SYSTEM FOR ASSISTANCE IN TUMOR REMOVAL AND METHOD THEREOF An AI (Artificial Intelligence) based robotic system (100) for surgical assistance during a tumor removal procedure is disclosed. The robotic system (100) includes a robotic body (102) comprising of one or more robotic arms (104) configured for high-precision articulation. The one or more robotic arms (104) is integrated with at least one laparoscope (108) and one or more surgical instruments (112). The at least one laparoscope (108) is integrated with an AI-enabled camera (110) for real-time imaging and tissue recognition. The one or more surgical instruments (112) is selected from the group consisting of scalpels, graspers, suturing devices, and cauterization tools stored within the robotic body (102). The robotic system (100) further comprises one or more sensors (114), including an ultrasonic sensor, a pressure sensor, and a tactile sensor for monitoring tool handling, force application, and proximity and a control module (118) to operate by a medical professional either locally or remotely.

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