

พิมพ์ต้นฉบับบทความวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

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JIROPAST SUAKAEW : DEVELOPMENT OF A REMOTE CONTROLLED ROBOTIC ARM FOR HIGH ACTIVITY SOURCE MANIPULATION. THESIS ADVISOR : ASSIST. PROF. SUVIT PUNNACHAIYA, THESIS COADVISOR : ATTAPORN PATTARASUMUNT, 93 pp. ISBN 974-636-690-4.

A remote controlled robotic arm for high activity source manipulation was developed in articulated-arm mechanical configuration. This robot has five degrees of joint freedom : waist, shoulder, elbow, pitch, roll and gripper. It sits on a four wheels transporting base enabling the robotic arm to move easily to working area. The actuating devices for energizing the various motion of joints consist of 5 sets of DC motor and 3 sets of stepping motor. The robot operates under the control of command keyboard via CPAT-32 microcontroller with 3 I/O interfacing ports, sending the remotely controlled signals to the actuators through cables while using a close circuit television viewing for operation.

The operating performance was tested and found that; the front wheels of transporting system can be steered in angle of $\pm 30^\circ$ and the ranges of other angular motion are : waist $0-360^\circ$, shoulder and elbow $0-70^\circ$, pitch $\pm 70^\circ$ and roll $\pm 15^\circ$. The opening range of the gripper is 8 cm. The robotic arm can carry 200 gram load and is easily manipulated by the user with a working range of 0.5 m. radius.

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