

Voice and Head Controlled Intelligent Wheelchair

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Abstract : The aim of this paper was to design a voice and head controlled electric power wheelchair (EPW). A novel activate the control system for quadriplegics with voice, head and neck mobility. Head movement has been used as a control interface for people with motor impairments in a range of applications. Acquiring measurements from the module is simplified through a synchronous a motor. Axis measures the two directions namely x and y. At the same time, patients can control the motorized wheelchair using voice signals (forward, backward, turn left, turn right, and stop) given by it self. The model of a dc motor is considered as a speed control by selection of a PID parameters using genetic algorithm. An experimental set-up constructed, which consists of micro controller as controller, a DC motor driven EPW and feedback elements. This paper is tuning methods of parameter for a pulse width modulation (PWM) control system. A speed controller has been designed successfully for closed loop of the dc motor so that the motor runs very closed to the reference speed and angle. Intelligent wheelchair can be used to ensure the person's voice and head are attending the direction of travel asserted by a conventional, direction and speed control.

Keywords : wheelchair, quadriplegia, rehabilitation , medical devices, speed control

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