ABSTRACT

Wheelchair is a very important equipment for disabled person with paralyzed leg. All of their daily activities rely on a wheelchair. Currently, electric wheelchairs are commercially available, but a relatively high price makes most of them can not afford to buy it. They modify the bicycle frame in such a way that can be used as a transportation equipment. However, there are still many problems that arise from existing designs. Among others, the fractions between chain and frame during right turn. This problem interfere stability and balance. The more important thing is that the relative travel distance cannot be far because the wheelchair has to be operated manually.

A tricycle wheelchair has been developed. It has two activator, manual and electric that can be called hybrid. On electric mode, wheelchair can reach maximum speed up to 13.41 kmph on flat smooth road and 13.01 kmph on flat pavement road. Wheelchair can also move on tested ramp with maximum 10° tilt. On full charged battery, wheelchair can go as far as 9.03 km with average speed 12.6 kmph.

Keywords: Wheelchair, Tricycle, Hybrid.