

Powered wheelchair developed by BRACU students

[Md Jaber Al Rashid](#)



CARC Research team at the CRP premise with the electric wheelchair

The *Control and Applications Research Centre* (CARC) of BRAC University has developed an environment friendly solar powered electric wheelchair for the *Centre for the Rehabilitation of the Paralyzed* (CRP). The developed electric wheelchair was handed over to Dr Valerie Ann Taylor, the founder and the coordinator of CRP on December 13, 2015. Dr Valerie Ann Taylor drove the electric wheelchair inside the CRP premise and was delighted seeing of the smooth performance of the electric wheelchair.

“Hardly any force is required to pedal the electric wheelchair. It is a great achievement for the research team of the CARC of BRAC University to build up an innovative electric wheelchair for the paralysed patients,” she said. Head of physiotherapist at CRP, head of electrical engineer at CRP and other administrative officers were also present to receive the prototype electric wheelchair.

The invention has been designed and developed by the research team of the CARC under the constant guidance and supervision of Professor Dr AKM Abdul Malek Azad, Department of Electrical and Electronic Engineering (EEE) of BRAC University and the director of the CARC. Two research engineers of the CARC worked relentlessly to implement the electric wheelchair, namely Md Jaber Al Rashid and Ataur Rahman, and Sheri Jahan Chowdhury were also involved as a project engineer of CARC. The other members worked to accomplish the prototype electric wheelchair are Tariqul Islam, Muhaiminur Rahman, ASM Mahibullah Khan and Rifat Jerin Urmi.

IEEE SIGHT USA funded a substantial amount to CARC in order to build up the prototype electric wheelchair for the handicapped. It has got two unique features: a throttle and a torque sensor pedal. These two features enable the torque sensor based electric wheelchair to be driven by the motor both at indoors and outdoors as well. Furthermore, the CARC research team also implemented a portable solar charger kit at the CRP premise, which consists of solar panels, batteries and a charge controller. The objective of using the solar charger kit is to charge the batteries by using the solar energy only, but not taking the power from the national grid. Thus, through the use of the renewable energy, it is possible to ensure the electric wheelchair can be maneuvered freely by people with disabilities by being completely independent of the national grid.

CARC of BRAC University and CRP signed a Memorandum of Understanding (MoU) during the first week of December, 2015. According to the MoU, the designed electric wheelchair will be driven at CRP premise for six months and necessary research work and feedback from the wheelchair users, medical officers and CRP engineers will be accounted to find out the feasibility of the developed electric wheelchair in Bangladesh. Moreover, CRP officials will provide further assistance and guidance to the CARC of BRAC University, so that newly designed and cost-effective electric wheelchairs can be manufactured for people with all forms of disability.

Considering the difficulty which the disabled people experience every day to maneuver existing manual wheelchairs, it is a dire need to build up electric wheelchairs for them. CARC aims to disseminate the use of torque sensor based electric wheelchairs with solar charger kit throughout the Bangladesh in order to ensure free and independent movement. Due to increase in the popularity of the electric wheelchairs in Bangladesh and to manufacture electric wheelchairs in large scale, various organisations, like CRP, needs to provide technical as well as financial assistance, and only then the dream of improving the lifestyles of people with disability in our community can be turned into reality. The CARC of BRAC University wishes to play a vital role to make the dream come true.