



# All-Terrain Self-Leveling Wheelchair

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**Patent Status:** Patent Pending

## Description of Technology

The All-Terrain Self-Leveling Wheelchair provides users powered mobility and comfort on rugged terrain. The wheelchair's all-terrain tires allow navigation through grass, gravel, and sand. The self-leveling seat uses an ADXL335 accelerometer to determine the angle of inclination which then adjusts and re-levels the seat with four independent linear actuators as the angle of the terrain alters. This process keeps the center of gravity towards the front of the chair when going up a hill and towards the back of the chair when going down a hill to increase user safety.

The wheelchair's enhanced user-interface with touchscreen and joystick allows the user to monitor the current status of the wheelchair and input custom control parameters. The user may activate the self-leveling system or manually elevate the wheelchair seat to a desired or convenient height. The seat has the ability to self-level at up to 45 degrees and can provide a manual lift of 6 inches.

## Applications

This power wheelchair provides a safe and comfortable solution to all-terrain mobility. Traditional power wheelchairs lack the features to navigate difficult topography safely and effectively.

## Features & Benefits

- Self-leveling seat with power elevation option
- Rugged all-terrain tires
- Easy customizable user-interface with touchscreen & joystick

## Market Opportunity

Millions of people use wheelchairs or scooters to enhance mobility. The medical supply & equipment industry is growing every year. Convenient features such as power seating have become the major trend and priority to wheelchair users to enhance independence and comfort.\*

\*Smith, M. (Aug. 1, 2014). Innovations: Emerging Trends in the Wheelchair Market. *New Mobility Magazine*, August 2014 Issue. Retrieved from <http://www.newmobility.com/2014/08/emerging-trends/>



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