Based on the advantages of the electric motor such as fast and precise torque response, the performance of the electric vehicle (EV) can be improved. During braking or driving on the cornering, the vehicle will over steer or under steer if a car turns by more or less than the amount commanded by the driver. To improve the stability of the small EV with four in-wheel motors, the differential regenerative braking torque control is proposed. In this system, the regenerative braking torque at each wheel will be controlled individually based on the value of slip ratio. If the slip ratio is greater than the optimum value, the regenerative brake will turn off. In this situation, the electric motor will not produce the regenerative braking torque. Conversely, if the slip ratio lower than the optimum value, the regenerative brake will turn on and the electric motor will generate the regenerative braking torque. In the numerical analysis, to investigate the effectiveness of the proposed model, the road condition is set to an icy road on the left tire and dry asphalt on the right tire. From the simulation results, the differential regenerative braking torque control can prevent the tire from lock-up and avoid the vehicle from skidding.