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Charge Characteristics of Rechargeable Batteries[1] PONN MAHESWARANATHAN, Winthrop University, CORMAC KELLY, South Carolina Governor's School for Science and Mathematics — Rechargeable batteries play important role in technologies today and they are critical for the future. They are used in many electronic devices and their capabilities need to keep up with the accelerated pace of technology. Efficient energy capture and storage is necessary for the future rechargeable batteries. Charging and discharging characteristics of three popular commercially available re-chargeable batteries (NiCd, NiMH, and Li Ion) are investigated and compared with regular alkaline batteries. Pasco's 850 interface and their voltage & current sensors are used to monitor the current through and the potential difference across the battery. The discharge current and voltage stayed fairly constant until the end, with a slightly larger drop in voltage than current, which is more pronounced in the alkaline batteries. After 25 charge/discharge cycling there is no appreciable loss of charge capacities in the Li Ion battery. Energy densities, cycle characteristics, and memory effects will also be presented.

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