

A battery to battery charging system is described that ordinarily operates a fast charging process comprising a constant current phase followed by a constant voltage phase. However when the first battery, which is used to charge the second battery, can no longer provide a sufficiently high voltage to carry out the fast charging process, the charging process is adapted to reduce the charging current during the "constant current phase" and thereby maintain the first battery voltage above a minimum voltage threshold. This allows the first battery to charge the second battery for at least one more charge cycle even though fast charging cannot be carried out.