Electrical Principles - Part 1

Storage and transfer of electrical energy

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Static Electricity

- ...
- ...
- ...

Current Electricity

- Superconductors
- Wire gauge
- DMM - Digital Multi Meters
- Resistance

Battery Classification

- Primary Cells: Cannot be recharged as the chemical reactions cannot be reversed.
- Secondary Cells: Can be recharged by passing a current through the cell in the opposite direction.

Battery Chemistries: LiPo

- Chemistry:
- Pros:
- Cons:
- Usage:

Battery Chemistries: LiFePO4

- Chemistry:
- Pros:
- Cons:
- Usage:

Battery Chemistries: Lead-Acid Battery

- Chemistry: lead, lead dioxide, electrolyte concentrated sulfuric acid
- Pros: High energy density, many recharge cycles, cheap
- Cons: Effectiveness reduced at low temperatures, self-discharge, contains lead
- Voltage: 2V per cell
- Usage: vehicle starter and ignition, backup power supplies
- Oldest type of rechargable battery (invented in 1859)

Battery Chemistries: NiCd

- Chemistry:
- Pros:
- Cons:
- Usage:

Battery Chemistries: NiMH

- Chemistry:
- Pros:
- Cons:
- Usage: