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Online Subscriptions:

IEEE Xplore - an online delivery system providing full text access to the world's highest quality technical literature in electrical engineering, computer science, and electronics. IEEE Xplore contains full text documents from IEEE journals, transactions, magazines, letters, conference proceedings, standards, and IEE (Institution of Electrical Engineers) publications.

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Disclaimer:

This pathfinder contains suggested materials on power electronics that are available at the College of Engineering Library II. However, some references were not included.

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POWER ELECTRONICS

PATHFINDER

POWER ELECTRONICS

- refers to control and conversion of electrical power by power semiconductor devices operate as switches.
- advent of silicon-controlled rectifiers, abbreviated as SCRs, led to the development of a new area of application called the power electronics.
- prior to the introduction of SCRs, mercury-arc rectifiers were used for controlling electrical power, but such rectifier circuits were part of industrial electronics and the scope for applications of mercury-arc rectifiers was limited.
- once the SCRs were available, the application area spread to many fields such as drives, power supplies, aviation electronics, high frequency inverters and power electronics originated.

MAIN TASKS OF POWER ELECTRONICS:

- Power electronics has applications that span the whole field of electrical power systems, with the power range of these applications extending from a few VA/Watts to several MVA / MW.

- The main task of power electronics is to control and convert electrical power from one form to another. The four main forms of conversion are:
  1. Rectification referring to conversion of ac voltage to dc voltage,
  2. DC-to-AC conversion,
  3. DC-to DC conversion and
  4. AC-to-AC conversion.

- SCRs and other power semiconductor devices are used as static switches.

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Mobile Power Electronics Rack

Image URL: http://power.mst.edu/images/ mobile_ power _electronics.jpg

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