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# Magnetic vector charges in the realization of nonzero magnetic work

*Wednesday, 13 July 2011 17:00 (2 hours)*

<p>Traditionally magnetic forces are supposed to act on moving electric scalar charges and the hitherto undetected Dirac's magnetic (scalar) charges, and that work done by such forces is always zero. Any possible evidence to the contrary is vehemently denied in order to justify this long held myth. Following our recently developed and validated concept of magnetic vector charges as sources of magnetic fields, we show that magnetic forces, like gravitational and electric forces, act on objects with corresponding physical attributes, and do nonzero work. This is illustrated here by depicting the mechanical generation of electricity and operation of simple electric motors in terms of magnetic vector charges. Other supporting examples and technological applications that can be cited include the jumping ring experiment, Gouy magnetic balance, Hall magnetic field probe, vibrating sample magnetometer, magnetic levitation and magnetic separation of materials. This simple realization may have far-reaching implications on our overall understanding of magnetism and its ultimate effective utilization.

## Level (Hons, MSc, <br>   PhD, other)?

other

## Consider for a student <br>   award (Yes / No)?

no

## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

yes

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