tially cancels the counter-clockwise torque generated by the magnetic field **701** terminating at the south pole of the second set of magnets **105**. This results in a partial nullification of the back torque reaction caused by the effect of Lenz's Law reaction and results in a corresponding increase in the efficiency of the machine because the external drive source has to supply less torque to overcome the reduced reaction of the machine.

What is claimed:

1. A reduced reaction alternating current generator, comprising:

a hollow stator core having an axis comprised of longitudinally positioned sheets laminated with a high permeability magnetic material, the laminated sheets including longitudinally embedded slots in which a conductor winding is laid parallel to the axis;

a cylindrical rotor concentric with and positioned inside the hollow stator core comprised of a high permeability magnetic material;

a shaft coupled to the rotor and driven by an external source so as to freely rotate the rotor relative to the hollow stator core;

a first set of magnets in which the south pole of each magnet is coupled to the surface to the rotor and the north pole of each magnet is facing the inner surface of the hollow stator core;

a second set of magnets in which the north pole of each magnet is coupled to the surface of the rotor and the south pole of each magnet is facing the inner surface of the hollow stator core; and

a set of silicon steel pieces coupled to the outer surface of the rotor comprised of individual silicon steel pieces positioned adjacent to and longitudinally in line with each individual magnet within the first set of magnets and each individual magnet within the second set of magnets.

2. The reduced reaction alternating current generator of claim **1**, wherein each silicon steel piece is positioned relative to a corresponding magnet to create magnetic circuit through the silicon steel piece and the corresponding magnet such that the magnetic flux emanating from each magnet is guided in one direction into the stator and then guided in an opposite direction out of the stator.

3. The reduced reaction alternating current generator of claim **1**, wherein the silicon steel pieces are sized to have approximately the same surface area as the corresponding magnets.

4. The reduced reaction alternating current generator of claim **1**, wherein the silicon steel pieces are positioned to provide for a gap between a silicon steel piece and a corresponding magnet, the gap being approximately equal to the longitudinal length of the corresponding magnet.

5. The reduced reaction alternating current generator of claim **1**, wherein the first set of magnets and the second set of magnets are permanent magnets.

6. The reduced reaction alternating current generator of claim **5**, wherein the permanent magnets can be Neodymium, Samarian Cobalt or Ceramic.

7. The reduced reaction alternating current generator of claim **1**, wherein the first set of magnets and the second set of magnets are electromagnets.

8. The reduced reaction alternating current generator of claim **1**, wherein the electromagnets are comprised of steel alloy having a high flux density of saturation.

9. The reduced reaction alternating current generator of claim **1**, wherein the high permeability magnetic laminations which make up the stator are made from grain oriented electrical steel, the grains oriented as to facilitate the flow of magnetic flux between a magnet and a corresponding silicon steel piece.

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