Realization of a low carbon society through game changing technologies

Magnet Reversal Permanent Magnet Motor (MRM) Driven by High Current Pulse Injection.

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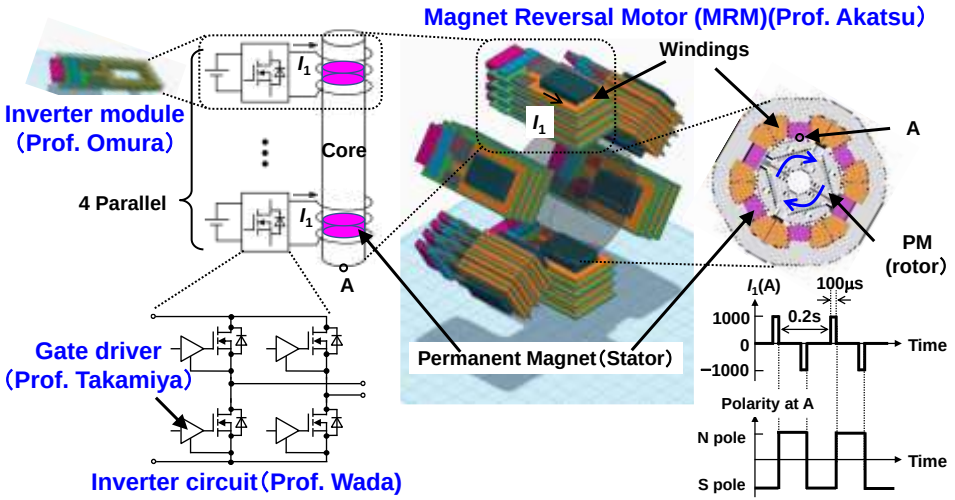
Summary :

MRM (Magnet Reversal Motor) is an innovative motor operated by a completely new principle. Stator has a magnet which polarity is periodically switching the S pole and N poles to generate a rotating magnetic field by adding current pulse. By replacing the conventional sine wave current drive with a short pulse current, the copper loss of the motor can be reduced, and a highly efficient motor can be realized. In this proposal, not only the MRM structure but also the inverter main circuit, power module, and gate drive which are essential for realizing MRM to make high current pulse are developed. If this proposal is successful, it is expected to have a high impact effect of reducing CO_2 emissions by 46 million tons by 2050, equivalent to 4% of Japan's CO_2 emissions.



Target:
Improve the efficiency of hydraulic actuator from 40% to 90% by using MRM.

Impact:
4% CO_2 output reduction.