Activities in the design and control of direct drives
Chair of Electric Drive Systems of the Otto-von-Guericke-University Magdeburg, Germany

The Chair of Electric Drive is researching the design of a new generation of electric drives and generators. Beside the usual design objectives as efficiency and power density, the reduction of manufacturing effort is specially considered in their research. This is reached by using simple winding configurations, high dynamic control, advanced power electronics and direct coupling without gear boxes. Such designs allow a higher integration of drives and generators in the target system enabling for new and unconventional applications as active pitch control for Darrieus turbines or free piston engines.
A short overview of current projects of the chair will be presented in order to illustrate their concepts in particular for the use with hydraulic machines and opening the discussion for possible cooperation fields.

Short Vita:

Roberto Leidhold received the B.S. degree in electronics engineering from the Universidad Nacional de Cordoba, Cordoba, Argentina, in 1995; the M.S. degree from the Universidad Nacional de Rio Cuarto, Rio Cuarto, Argentina, in 2000; and the PhD degree from the Universidad Nacional de La Plata, La Plata, Argentina, in 2003.
From 2003 to 2004, he was postdoctoral fellow at the Universidad Nacional de Río Cuarto. From 2005 to 2011, he was with the Technical University of Darmstadt, Darmstadt, Germany, first as a Research Scholar of the Alexander von Humboldt Foundation, then as a Research Associate and later as Principal Investigator. Since 2011, he has been a Professor on charge of the Chair of Electric Drive Systems at the Otto-von-Guericke-Universität Magdeburg, Germany.
His research interests include control of drives, electric machines and renewable energy generation.