

Inhaltsverzeichnis

1. Keynote	
Management of Technology-Based Innovation in an Industrial Enterprise	7
T. Bertolini, Dr. Fritz Faulhaber GmbH & Co. KG, Schönaich	
2. Analytical Calculation Model of an Electronically Commutated Synchronous Motor Including Parasitic Effects	12
R. Gottkehaskamp, A. K. Hartmann, Fachhochschule Düsseldorf	
3. Methods for calculation of skewed permanent magnet motors for short and highly saturated motors	18
M. Klausnitzer, A. Möckel, Ilmenau University of Technology	
4. Reducing Magnetic Noise of an Auxiliary Water Pump Drive	23
T. König, T. Wilharm, Robert Bosch GmbH, Bühl	
5. Axial Type Switched Reluctance Motor of Soft Magnetic Composite	29
T. Kellerer, O. Radler, T. Sattel, Ilmenau University of Technology; S. Purfürst, S. Uske, driveXpert GmbH, Ilmenau	
6. Analysis of an integrated electromagnetic actuator prototype	35
J. Emmrich, W. Bickel, B. Denkena, B. Ponick, Leibniz Universität Hannover	
7. Investigation of Twisted String Actuation with a Programmable Mechanical Load Test Stand	40
C. May, K. Schmitz, M. Becker, M. Nienhaus, Saarland University, Saarbrücken	
8. Series Elastic Actuators for Man-Machine Cooperation	46
P. P. Pott, H. Graefenstein, J. Fischer, R. Müller, H. F. Schlaak, E. Abele, Technische Universität Darmstadt	
9. Multi-degree-of-freedom ultrasonic motors using rotation-symmetric piezoelectric vault geometries	51
B. Keller, W. Schinköthe, University of Stuttgart	
10. Industrial Applications of Shape Memory Alloys – Potentials and Limitations	57
A. Bucht, K. Pagel, C. Eppler, H. Kunze, Fraunhofer Institute of Machine Tools and Forming Technology, Dresden	
11. Exploiting hysteresis in position control: the magnetic shape memory push-push actuator	63
L. Riccardi, B. Holz, H. Janocha, Saarland University, Saarbrücken	
12. Benefits of standardization illustrated by shape memory actuators in industrial applications ...	69
A. Czechowicz, FGW e.V., Remscheid; S. Langbein, FG-Innovation GmbH, Bochum; J. Pollmann, Ruhr-University Bochum	
14. Reliability Prediction for Mechatronic Drive Systems	75
S. Bobrowski, W. Schinköthe, University of Stuttgart; M. Döring, U. Jensen, University of Hohenheim, Stuttgart	

15. High Performance-motor with bell-shaped air gap winding	81
R. Keller, Dr. Fritz Faulhaber GmbH & Co. KG, Schönaich	
16. Performance Analysis of Bearingless Axial-Force/Torque Motors	87
W. Bauer, W. Amrhein, Johannes Kepler University, Linz, Austria	
18. Systematic error of analytical iron loss approaches in electrical machines	93
M. Reinlein, A. Hoffmann, T. Hubert, A. Kremser, Georg Simon Ohm Nuremberg Institute of Technology	
19. PM Synchronous Motor with Air Coil Winding based on the Double-Coil Actuator	99
M. Hoffmann, G. Huth, University of Kaiserslautern	
20. Multi-Criteria Comparison of External and Dual-Rotor PMSM Topologies with Non-Overlapping Windings	105
M. Baun, J. Krotsch, ebm-papst Mulfingen GmbH & Co. KG.; J. Ulm, Heilbronn University, Campus Künzelsau, Künzelsau; B. Piepenbreier, University of Erlangen-Nuremberg, Erlangen	
21. An Advanced Transverse Flux Machine for Use in Automation	111
F. Dreher, N. Parspour, Universität Stuttgart (IEW), Stuttgart-Vaihingen; B. Hagemann, SEW-Eurodrive, Bruchsal	
22. Keynote	
Bearingless Slice Motors: General Overview and the Special Case of Novel Magnet-Free Rotors	116
W. Gruber, Johannes Kepler University, Linz, Austria	
23. Magnetic Levitation System for Linear Direct Drives based on Lorentz Forces	122
B. Reutzsch, W. Schinköthe, University of Stuttgart	
24. Magnetic Levitating System with 6 DOF	128
C. Schaeffel, M. Katzschmann, H.-U. Mohr, IMMS Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH Ilmenau; R. Gloess, C. Rudolf, C. Mock, C. Walenda, Physik Instrumente (PI) GmbH & Co. KG, Karlsruhe	
25. Moving-Magnet Actuator with Flexure Guide for Precise Positioning	132
F. Ehle, T. Bödrich, O. R. Rivera Rodriguez, J. Lienig, Technische Universität Dresden	
26. Keynote	
Fantasy and Reality – Electric Motors within the Human Body	138
M. Nienhaus, Saarland University, Saarbrücken	
27. Integration of Sensor Systems into Micro Drive Systems	143
H. Wallner, L. Neuffer, T. Scholl, Dr. Fritz Faulhaber GmbH & Co. KG Schönaich	
28. Magnetic Sensors on Mars – a German contribution to the “Curiosity” Mission	147
R. Slatter, Sensitec GmbH, Lahnau	
29. Design of a Fully Actuated Electromagnetic Bending Actuator for Endoscopic Applications	152
M. Wöhrmann, M. Dörbaum, B. Ponick, A. Mertens, Leibniz Universität Hannover	