International Journals:

A.1 L. Malesani, P. Mattavelli, L. Rossetto, P. Tenti, W. Marin, A. Pollmann:
"Electronic Welder with High-Frequency Resonant Inverter",

A.2 G. Spiazzi, P. Mattavelli, L. Rossetto, L. Malesani,
"Application of Sliding Mode Control to Switch-Mode Power Supplies",

A.3 P. Mattavelli, L.Rossetto, G.Spiazzi:
"Small-Signal Analysis of DC-DC Converters with Sliding Mode Control"

A.4 P. Mattavelli, L. Rossetto, G.Spiazzi, P.Tenti:
"General-Purpose Fuzzy Controller for DC-DC Converters"

A.5 Spiazzi, P. Mattavelli, L. Rossetto,
"Power factor preregulators with improved dynamic response",

A.6 P. Mattavelli, P. Tenti,
"Load and Line Identification in Multi-Phase Systems: a Compensation-Oriented Approach,"

A.7 P. Mattavelli, G.C. Verghese, A.M. Stankovic:
"Phasor Dynamics of Thyristor-Controlled Series Capacitor Systems"

A.8 L. Malesani, P. Mattavelli, P. Tomasini,
"High-Performance Hysteresis Modulation Technique for Active Filters,"

A.9 L. Malesani, P. Mattavelli, P. Tomasini,
"Improved Constant-Frequency Hysteresis Current Control of VSI Inverters with Simple Feed-forward Bandwidth Prediction"

A.10 S. Buso, L. Malesani, P. Mattavelli, R. Veronese:

A.11 S. Buso, L. Malesani, P. Mattavelli

A.12 P. Mattavelli, P. Tenti,
"Design Aspects of Hybrid Compensation Systems"

A.13 S. Buso, P. Mattavelli, L. Rossetto, G. Spiazzi
"Simple Digital Control Improving Dynamic Performances of Power Factor Preregulators"

A.14 P. Mattavelli, G.C. Verghese, A.M. Stankovic:

A.15 L. Malesani, P. Mattavelli, S. Buso
"Robust Deadbeat current control for PWM Rectifiers and Active Filters"

A.16 S. Buso, S. Basolo, L. Malesani, P. Mattavelli

A.17 P. Mattavelli

A.18 P. Mattavelli, G. Escobar, A. Stankovic

A.19 P. Mattavelli

A.20 G. Escobar, A. Stankovic, P. Mattavelli

A.21 S.Busó, S. Basolo, P. Mattavelli

A.22 P. Tenti, P. Mattavelli,

A.23 G. Escobar, A. Stankovic, P. Mattavelli

A.24 G. Escobar, A. Stankovic, P. Mattavelli

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"An Adaptive Controller in the stationary reference frame for D-Statcom in unbalanced operation"  

A.25  
P. Mattavelli, F. Marafao  
"Repetitive-Based Control for Selective Harmonic Compensation in Active Power Filters"  

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A.27  
P. Mattavelli, G. Spiazzi, P. Tenti  
"Predictive Digital Control of Power Factor Preregulator with Input Voltage Estimation using Disturbance Observers"  
(2005 Prize Paper Award for IEEE Transactions on Power Electronics)

A.28  
P. Mattavelli  
"An improved Deadbeat Control for UPS using Disturbance Observers"  

A.29  
J. Leyva-Ramos, G. Escore, P.R. Martinez, P. Mattavelli,  
"Analog Circuits to Implement Repetitive Controllers for Tracking and Disturbance Rejection of Periodic Signals"  

A.30  
P. Mattavelli, L. Tubiana, M. Zigliotto  
"Torque-ripple reduction in PM drive using repetitive current-control"  

A.31  
W. Stefanutti, P. Mattavelli  
"Fully Digital Hysteresis Modulation with Switching Time Prediction"  

A.32  
G. Escore, P. R. Martinez, J. Leyva-Ramos, P. Mattavelli  
"A Negative Feedback Repetitive Control Scheme for Harmonic Compensation"  

A.33  
W. Stefanutti, P. Mattavelli, G. Spiazzi, P. Tenti  
"Digital Control of single-phase Power Factor Preregulators based on current and voltage sensing at switch terminals"  
(2006 Prize Paper Award for IEEE Transactions on Power Electronics)

A.34  
W. Stefanutti, P. Mattavelli, S. Saggini, M. Ghioni  
"Autotuning of Digitally Controlled dc-dc Converters Based on Relay Feedback"  

A.35  
G. Escore, A.A. Valdez, J. Leyva-Ramos , P. Mattavelli  
"A repetitive-based controller for UPS Inverter to compensate unbalance and harmonic distortion"  

A.36  
P. Tenti, J.L. Willems, P. Mattavelli, E. Tedeschi  
"Generalized Symmetrical Components for Periodic Non-Sinusoidal Three-Phase Signals"  

A.37  
P. Tenti, E. Tedeschi, P. Mattavelli  
"Compensation Techniques based on Reactive Power Conservation"  

A.38  
G. Escore, P. Mattavelli, A. Stankovic, A.A. Valdez, J. Leyva-Ramos  
"An adaptive control for UPS to compensate unbalance and harmonic distortion using a combined capacitor/load current approach"  

A.39  
S. Saggini, D. Trevisan, P. Mattavelli, M. Ghioni  
"Synchronous/Asynchronous Digital Voltage-Mode Control for dc-dc Converters"  

A.40  
S. Saggini, W. Stefanutti, E. Tedeschi, P. Mattavelli  
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W. Stefanutti, S. Saggini, P. Mattavelli, M. Ghioni  
"Power Line Communication in Digitally-Controlled dc-dc Converters Using Switching Frequency Modulation",  

A.42  
L. Corradini P. Mattavelli, E. Tedeschi, D. Trevisan  
"High-bandwidth Multi-Sampled Digitally Controlled DC-DC Converters using Ripple Compensation"  

A.43  
S. Saggini, P. Mattavelli, G. Garcea, M. Ghioni,  
"A Mixed-signal Synchronous/ Asynchronous control for high-frequency dc-dc boost converters"  

A.44  
S. Saggini, P. Mattavelli, M. Ghioni, M. Redaelli  
"Mixed-signal voltage-mode control with an inherent analog derivative action"  

A.45  
L. Corradini, P. Mattavelli,  
"Modeling of MultiSampled Pulse Width Modulators for Digitally Controlled DC-DC Converters",  

A.46  
L. Corradini, P. Mattavelli, W. Stefanutti, S. Saggini,  
"Simplified Model Reference-based Autotuning for Digitally Controlled SMPS",  

A.47  
G. Spiazzi, P. Mattavelli, L. Rossetto,  
"Effects of Parasitic Components in High-Frequency Resonant Drivers for Synchronous Rectification MOSFETs"  

A.48  
P. Mattavelli, F. Polo, F. Dal Lago, S. Saggini  
"Analysis of Control-Delay Reduction for the Improvement of UPS Voltage-Loop Bandwidth",  

R. Wu, L. Malesani, P. Ning, Z. Wang, P. Mattavelli, K. N. R. Rajasekharan
“A High-Temperature SiC Three-Phase AC-DC Converter Design for >100C Ambient Temperature”,

W. Feng, F. C. Lee, P. Mattavelli,
“Optimal Trajectory Control of Burst Mode for LLC Resonant Converters”,

“Digital Enhanced V2-Type Constant On-Time Control Using Inductor Current Ramp Estimation for a Buck Converter With Low-ESR Capacitors”,

Peer reviewed International Conferences: (the conference papers published in the improved journal version and reported in the previous section are here reported but not numbered)


B.109 G. Escobar, A. Stankovic, P. Mattavelli
"Reactive Power, Unbalance and Harmonics Compensation using D-STATCOM with Dissipativity-based Controller"

B.-- S. Buso, S. Fasolo, P. Mattavelli
"Uninterruptible Power Supply using current and voltage predictive regulators"

B.-- G. Escobar, A. Stankovic, P. Mattavelli
"Dissipative-based adaptive and robust control of UPS in unbalanced operation"

B.-- G. Escobar, A. Stankovic, P. Mattavelli
"An Adaptive Controller in the stationary reference frame for D-Statcom in unbalanced operation"
9th European Conference on Power Electronics and Applications (EPE 2001), Graz, 27-29 August.

B.110 P. Mattavelli
"Robust Deadbeat Control for UPS using State and Disturbance Observers"
9th European Conference on Power Electronics and Applications (EPE 2001), Graz, 27-29 August.

B.111 G. Escobar, A. Stankovic, P. Mattavelli, Ortega R.
"A comparative study of three nonlinear controllers for TCSC"

B.112 J.M. Carrao, E. Galvan, M. Perales, A. Stankovic, P. Mattavelli
"Direct Current Control: a novel control strategy for harmonic and reactive compensation with active filters under unbalanced operation"

B.113 G. Escobar, A.M. Stankovic, R. Ortega, P. Mattavelli
"On the nonlinear control of TCSC"

B.-- P. Mattavelli
"A Modified Dead-beat Control for UPS using Disturbance Observer"

B.114 P. Mattavelli
"Control of High-performance AC Power Supplies using Adaptive Digital Filters"

B.-- P. Mattavelli, F. Marafao
"Selective Active Filters using Repetitive Control Techniques"

B.115 G. Escobar, A.M. Stankovic, V. Cardenas, P. Mattavelli
"A controller to compensate voltage sags, unbalance and harmonic distortion using a series active filter"

B.116 G. Escobar, A.M. Stankovic, V. Cardenas, P. Mattavelli
"A controller based on resonant filters for a series active filter used to compensate current harmonics and voltage unbalance"

B.117 G. Escobar, A.M. Stankovic, V. Cardenas, P. Mattavelli
"An Adaptive Controller for a Series Active Filter to Compensate Voltage Sags, Unbalance and Harmonic Distortion"
IEEE International Power Electronics Congress (CIEP02), Guadalajara, Mexico, October 20-24, 2002.

B.118 B. Han, P. Mattavelli
"Operation Analysis of Novel UPFC without Series Injection Transformers"

B.-- P. Mattavelli, G. Spiazzi, P. Tenti
"Predictive Digital Control of Power Factor Preregulator using Disturbance Observer for Input Voltage Estimation"

B.119 P. Mattavelli, G. Spiazzi, P. Tenti
"Digital Control of Power Factor Preregulator with Input Voltage Estimation"
IEEE 7th Brasilian Power Electronics Conference (COBEP), September 2003, Fortaleza, Brasil.

B.120 F. Marafao, S. Buso, P. Mattavelli
"Repetitive-based Control for selective harmonic compensation using Discrete Cosine Transform"
IEEE 7th Brasilian Power Electronics Conference (COBEP), September 2003, Fortaleza, Brasil.

B.-- P. Tenti, P. Mattavelli
"A Time-Domain Approach to Power Terms Definition under non-sinusoidal conditions"
Six International Workshop on Power Definition and Measurements under Nonsinusoidal Conditions, Milan (Italy), October 2003

B.-- P. Mattavelli, G. Escobar, A. Stankovic
"An adaptive control for UPS to compensate unbalance and harmonic distortion using a combined capacitor/line current approach"
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’03, Roanoke, Virginia, USA, November, 2003.

B.-- P. Mattavelli, W. Stefanutti
"Fully Digital Hysteresis Modulation with Switching Time Prediction"

B.121 P. Mattavelli
"Digital control of dc-dc Boost converters with inductor current estimation"

B.-- P. Mattavelli, W. Stefanutti, G. Spiazzi, P. Tenti
"Digital Control of single-phase Power Factor Preregulator suitable for Smart-Power Integration"
IEEE Power Electronics Specialist Conference (PESC 2004), Achen, Germany, 20-25 June, 2004

B.122 G. Spiazzi, S. Buso, P. Mattavelli
"Analysis of the Active-Clamped Soft-Switched Forward Converter without Output Filter"
IEEE Power Electronics Specialist Conference (PESC 2004), Achen, Germany, 20-25 June, 2004

B.-- P. Mattavelli, F. Polo, S. Sattin, F. Dal Lago
"Dynamic Improvement in UPS by Means of Control Delay Minimization"

B.--- Leyva-Ramos, J.; Escobar, G.; Martinez, P.R.; Mattavelli, P.
“Analog circuits to implement a repetitive controller for harmonic compensation”

B.--- S. Saggi, G. Garcea, M. Ghioni, P. Mattavelli
“Analysis of High-Performance Synchronous/Asynchronous digital control for dc-dc boost converters”
IEEE Applied Power Electronics Conference (APEC) ’05, Austin (TX), 6-10 March 2005.

B.123 F. Polo, P. Mattavelli
“Dynamic improvement in Active Power Filters based on the output stage of Uninterruptible Power Supply”
International PCIM Conference 2005, June 7 – 9, 2005 in Nürnberg, Germany.

B.124 G. Escobar, A.A. Valdez, J. Leyva-Ramos, P. Mattavelli
“A Repetitive-based controller for UPS using a combined capacitor/load current sensing”

B.--- W. Stefanutti, P. Mattavelli, S. Saggi, M. Ghioni
“Autotuning of Digitally Controlled Buck Converters Based on Relay Feedback”

B.125 D. Trevisan, P. Mattavelli, P. Tenti
“Digital Control of Single-Inductor Dual-Output dc-dc Converters in Continuous-Conduction Mode”

W. Stefanutti, P. Mattavelli, S. Saggi, M. Ghioni
“A PID Autotuning Method for Digitally Controlled dc-dc Boost Converters”

B.127 G. Garcea, P. Mattavelli, K. Lee, F.C. Lee
“A Mixed-Signal Control for VRM applications”

B.128 P. Mattavelli, L. Tubiana, M. Zigliotto
“Simple Control Autotuning for PMSM Drives based on Feedback Relay”

B.129 D. Trevisan, W. Stefanutti, P. Mattavelli, P. Tenti
“FPGA control of SIMO dc-dc converters using load current estimation”
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’05, Roanoke, Virginia, USA, November, 2005.

B.130 BEST PAPER PRIZE for the Special Session Low-Power Electronics and System on the chip for Industry
S. Saggi, W. Stefanutti, D. Trevisan, P. Mattavelli, G. Garcea,
“Prediction of Limit-Cycles Oscillations in Digitally Controlled DC-DC Converters using Statistical Approach”
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’05, Roanoke, Virginia, USA, November, 2005.

B.131 P. Tenti, E. Tedeschi, P. Mattavelli
“Optimization of Hybrid Filters for Distributed Harmonic and Reactive Compensation”

“Predictive Digital Control for Voltage Regulation Module Applications”

(selected for the PLENARY SESSION - only 2 papers selected among all conference papers)
W. Stefanutti, P. Mattavelli, S. Saggi, G. Garcea,
“Energy-based Approach for predicting Limit Cycle Oscillations in digitally-controlled dc-dc converters”

B.--- D. Trevisan, P. Mattavelli, G. Garcea, M. Ghioni, S. Saggini
“High-Performance Synchronous/Asynchronous Digital Voltage-Mode Control for dc-dc Converters”

B.134 W. Stefanutti, P. Mattavelli, G. Garcea, M. Ghioni, S. Saggini
“Power Line Communication in Digitally Controlled dc-dc converters using switching frequency modulation”
IEEE Applied Power Electronics Conference (APEC) ’06, Dallas (TX), March 2006, pp. 1595-1600.

B.--- W. Stefanutti, E. Tedeschi, P. Mattavelli, S. Saggini
“Digital Deadbeat Control Tuning for dc-dc converters using error correlation”

B.135 E. della Monica, W. Stefanutti, E. Tedeschi, P. Mattavelli, S. Saggini
“Reduction of quantization effects in digitally controlled dc-dc converters using inductor current estimator”

B.136 L. Corradini, P. Mattavelli
“Analysis of a multiple sampling technique for digitally-controlled dc-dc switching converters”

B.137 D. Trevisan, P. Mattavelli, S. Saggini
“Random switching frequency in a synchronous-asynchronous digital voltage-mode control for dc-dc converters”

B.--- P. Tenti, J. L. Villeneuve, P. Mattavelli, E. Tedeschi
“Generalized Symmetrical Components for Periodic Non-Sinusoidal Three-Phase Signals”
Seventh International Workshop on Power Definition and Measurements under Nonsinusoidal Conditions, Cagliari (Italy), July 2006.

B.--- P. Tenti, E. Tedeschi, P. Mattavelli
“Compensation Techniques based on Reactive Power Conservation”
Seventh International Workshop on Power Definition and Measurements under Nonsinusoidal Conditions, Cagliari (Italy), July 2006.

B.138 Z. Zhao, A. Prodic, P. Mattavelli
“Self-Programmable PID Compensator for Digitally Controlled SMPS”
B.139 P. Tenti, E. Tedeschi, P. Mattavelli
“Distorting loads identification and compensation by distributed harmonic and reactive compensation systems”
XVI Brazilian Automation Conference (CBA) Salvador, Bahia (Brazil), 2006.

“Communication on Power Lines Using Frequency and Duty-Cycle Modulation in digitally Controlled dc-dc Converters”
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’06, Paris (France), November 6-10, 2006, pp. 2144-2149.

B.141 D. Trevisan, P. Mattavelli, M. Zigliotto, S. Saggini
“Limited-Pool Random Carrier-Frequency PWM for digitally controlled dc-dc converters”
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’06, Paris (France), November 6-10, 2006, pp. 4929-4934.
BEST PAPER PRIZE for the Special Session Low-Power Electronics and System on the chip for Industry

B.--- E. Tedeschi, P. Mattavelli, D. Trevisan, L. Corradini
“Repetitive ripple estimation in multi-sampling digitally controlled dc-dc converters”
IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’06, Paris (France), November 6-10, 2006, pp. 1655-1660.

B.142 G. Spiazzi, P. Mattavelli, L. Rossetto,
“Design Considerations and Comparison between Two High-Frequency Resonant Drivers for Synchronous Rectification”

B.--- S. Saggini, P. Mattavelli, M. Ghioni
“A mixed-signal voltage-mode control with an inherent analog derivative action”

B.143 M. Shirazi, R. Zane, D. Maksimovic, L. Corradini, P. Mattavelli
“AutoTuning Techniques for Digitally Controlled Point-of-Load Converters with Wide Range of Capacitive Loads”

B.144 L. Corradini, E. Tedeschi, P. Mattavelli
“Advantages of The Symmetric-On Time Modulator In Multiple-sampled Digitally Controlled DC-DC Converters”
IEEE Power Electronics Specialist Conference (PESC) ’07, Orlando, June 2007.

B.145 L. Corradini, P. Mattavelli, D. Maksimovic
“Robust Relay-Feedback Based Autotuning For DC-DC Converters”
IEEE Power Electronics Specialist Conference (PESC) ’07, Orlando, June 2007.

B.146 W. Stefanutti, S. Saggini, E. Tedeschi, P. Mattavelli, P. Tenti
“Simplified model reference tuning of pid regulators for digitally controlled dc-dc converters based on crossover frequency analysis”
IEEE Power Electronics Specialist Conference (PESC) ’07, Orlando, June 2007.

B.147 D. Trevisan, S. Saggini, P. Mattavelli
“Hysteresis-based mixed-signal voltage-mode control for dc-dc converters”
IEEE Power Electronics Specialist Conference (PESC) ’07, Orlando, June 2007.

Topical Workshop on Electronics for Particle Physics (TWEPP) invited talk, September 2007.

B.--- L. Corradini, W. Stefanutti, P. Mattavelli
“Analysis of multi-sampled current control for active filters”

B.149 G. Spiazzi, L. Rossetto, P. Mattavelli, P. Cova, N. Delmonte
“Layout Considerations and Thermal Analysis of a 1.8 MHz Resonant VRM”


B.151 W. Stefanutti, S. Saggini, L. Corradini, E. Tedeschi, P. Mattavelli, D. Trevisan
“Closed-Loop Model Reference Tuning of PID Regulators for Digitally Controlled dc-dc Converters Based on Duty-Cycle Perturbation”, IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’07, Taiwan, November 2007.

B.--- L. Corradini, P. Mattavelli, S. Saggini


B.--- S. Saggini, E. Orietti, P. Mattavelli, A. Pizzutelli, A. Bianco
“Fully Digital Hysteresis Voltage-Mode Control for dc-dc Converters based on Asynchronous Sampling”

B.--- E. Orietti, S. Saggini, P. Mattavelli and G. Spiazzi,
“EMS Analysis on Digital Pulse Width Modulators”,
(BEST POSTER PAPER AWARD)

B.--- R.P. Venturini, P. Mattavelli, P. Zanchetta, M. Sumner,
“Variable Frequency Adaptive Selective Compensation for Active Power Filters”
IET 4th International Conference on Power Electronics, Machines and Drives 2008 (PEMD 2008), 2 - 4 April 2008, York St John University College, York, UK

B.154 E. Tedeschi, P. Tenti, P. Mattavelli
“Synergistic Control and Cooperative Operation of Distributed Harmonic and Reactive Compensators”

B.--- A. Costabeber, L. Corradini, P. Mattavelli, S. Saggini


A. Costabeber, P. Mattavelli, S. Saggini: “FPGA implementation of Phase Sheding with Time-Optimal Controller in Multi-phase” IEEE International Conference on Industrial Electronics, Control and Instrumentation, IECON’09, Porto (Portugal)


“An integrated common mode and differential mode choke for EMI suppression using magnetic epoxy mixture”

IEEE Applied Power Electronics Conference (APEC) ’11, Fort Worth (TX), March 2011, pp. 1715-1720.


Patents/Invention Disclosures:

C.1 G. Escobar, A.M. Stankovic, P. Mattavelli:
“Adaptive Controller For D-Statcom in the Stationary Reference Frame to Compensate for Reactive and Harmonic Distortion Under Unbalanced Conditions”

C.2 G. Escobar, A.M. Stankovic, P. Mattavelli:
“A Robust Controller for Controlling a UPS in Unbalanced Operation”

C.3 V. Girlando, A. Lubello, R. Boero, P. Tenti, P. Mattavelli:
“Drive Mechanism and method for opening/closing of electric switchgear”

C.4 S. Saggini, R. Cappelletti, P. Mattavelli, W. Stefanutti:
“Tecnica di Power-Line communication tra DC-DC attraverso la modulazione della frequenza di switching”
IT/17.03.06/ITA MI20060487
S. Saggini, R. Cappelletti, P. Mattavelli, W. Stefanutti:
“Transmitting apparatus of digital signals on a supply line of electronics devices and corresponding method”
European Patent Application no. 07104200.6,2411, filed 15.03.07. (Patent pending)

C.5 P. Mattavelli, G. Spiazzii, E. Orietti, C. Adragna, G. Gattavari:


Books or chapter of books:

D.1 S. Buso, P. Mattavelli:
“Digital Control in Power Electronics”

D.2 G. Spiazzii, P. Mattavelli: (capitolo di un libro)
“The Power Electronics Handbook – Part II – Chapter 8”