Stanford

Simona Onori

Associate Professor of Energy Science Engineering and Senior Fellow at the Precourt Institute for Energy

Energy Science & Engineering

Bio

BIO

Simona Onori is an Associate Professor in Energy Science and Engineering at Stanford University, where she also holds a courtesy appointment in Electrical Engineering. She is the Director of the Stanford Energy Control Lab and a Senior Fellow at the Precourt Institute for Energy. She is a SAE Fellow and serves as the Editor-in-Chief of the SAE International Journal of Electrified Vehicles (since 2020) and was a Distinguished Lecturer for the IEEE Vehicular Technology Society from 2020 to 2022. She has been a Senior Member of the IEEE since 2015 and was elected to the Board of Governors of the IEEE Control Systems Society for the 2024–2026 term.

Dr. Onori was named one of the InspiringFifty Italy 2024 winners, recognizing her as a role model in innovation and technology. She received the 2020 U.S. Department of Energy Clean Energy Education & Empowerment (C3E) Award in the Research category, the 2019 Board of Trustees Award for Excellence from Clemson University, the 2018 Global Innovation Contest Award by LG Chem, the 2018 SAE Ralph R. Teetor Educational Award, and the 2017 NSF CAREER Award. Additional honors include the 2017 Faculty Fellows Award from the College of Engineering and Science at Clemson University (a three-year award), the 2017 Esin Gulari Leadership & Service Award from Clemson University's College of Engineering, the 2017 Energy Leadership Award from the Energy Inc. Summit in Charlotte, NC, with recognition from North Carolina Senator Thom Tillis, and the 2016 Sustainability Award from InnoVision in the State of South Carolina, with recognition from South Carolina U.S. Senator Timothy E. Scott. Earlier recognitions include the 2012 Lumley Interdisciplinary Research Award from The Ohio State University College of Engineering and the 2011 Outstanding Technology Team Award from TechColumbus.

She served as Chair of the IEEE Control Systems Society Technical Committee on Automotive Controls (2015-2017) and is currently Vice-Chair of the IFAC Technical Committee on Automotive Controls TC 7.1. She is co-author of a book and two book chapters on hybrid electric vehicles and has published over 200 peer-reviewed journal articles and conference proceedings. Under her mentorship, her students received the 2017 IEEE CCTA Best Paper Award, the 2021 IEEE CCTA Outstanding Paper Award, and the 2021 IEEE Transactions on Control Systems Technology Outstanding Paper Award.

She earned a Laurea Degree in Electrical and Computer Engineering from University of Rome "Tor Vergata", an M.S. in Electrical Engineering from University of New Mexico, and a PhD. in Control Engineering from University of Rome "Tor Vergata.

ACADEMIC APPOINTMENTS

- Associate Professor, Energy Science & Engineering
- Senior Fellow, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Associate Professor, By Courtesy, of Electrical Engineering, Stanford University, (2024- present)
- Senior Fellow, Precourt Institute for Energy, Stanford University, (2024- present)
- Associate Professor, Department of Energy Science and Engineering, Stanford University, (2023- present)
- Assistant Professor (by courtesy), Electrical Engineering, Stanford University, (2019-2023)
- Assistant Professor, Department of Energy Resources Engineering, Stanford University, (2018-2023)
- Visiting Professor, PRISME, University of Orléans, (2016-2016)
- Invited Lecturer, National Engineering Lab for Electric Vehicles School of Mechanical Engineering, Beijing Institute of Technology, (2015-2015)
- Assistant Professor of Electrical and Computer Engineering (Joint Appointment), Clemson University, (2014-2017)
- Visiting Professor, Industrial Engineering Department, University of Trento, Italy, (2014-2014)
- Assistant Professor of Automotive Engineering, Clemson University, (2013-2017)
- Research Scientist, Senior Research Associate, Lecturer, Research Associate, The Ohio State University, (2009-2013)
- Postdoctoral Fellow, The Ohio State University, (2007-2008)
- Control Engineer, Orbit and Attitude Spacecraft Control Division, Thales-Alenia Space, Italy, (2007-2007)

HONORS AND AWARDS

- Dean’s Faculty Fellow, College of Engineering, Computing and Applied Sciences, Clemson University (2024-2025)
- Fellow, Society of Automotive Engineering (SAE) International (2022)
- IEEE Transactions on Control Systems Technology Outstanding Paper Award, IEEE Control Systems Society (2022)
- Outstanding Student Paper Award (as advisor), IEEE CCTA (2021)
- Distinguished Lecturer, IEEE Vehicular Technology Society (2020-2022)
- US C3E Women in Clean Energy, Mid-Career Research Award, C3E (2020)
- Board of Trustees Award for Excellence, Clemson University (2019)
- Global Innovation Contest Award (category energy storage), LG Chem, Ltd/LG Energy Solution (2018)
- Ralph R. Teetor Education Award, Society of Automotive Engineering (SAE) International (2018)
- College of Engineering and Science Dean’s Faculty Fellows Award, (three-year award) (2017)
- Esin Gulari Leadership & Service Award College of Engineering, Computing and Applied Sciences, Clemson University (2017)
- NSF CAREER, National Science Foundation (2017)
- PSG Distinguished Visiting Professor awarded by the Managing Trustee, PSG College of Technology, India (2017)
- Energy Leadership Award in the category Emerging Leader, Energy Inc. Summit, Charlotte, NC, with recognition from U.S. Senator from NC, Thom Tillis (2016)
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE) (2015)
- Sustainability Award, InnoVision State of South Carolina, with recognition from U.S. Senator from South Carolina, Timothy E. Scott (2015)
- Lumley Interdisciplinary Research Award, OSU College of Engineering (2012)
- Outstanding Technology Team Award, TechColumbus (2011)
- Outstanding Student Fellowship, University of Rome “Tor Vergata”, Italy (1997-2000)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Elected Member, Board of Governors, IEEE Control System Society (2024 - present)
- Vice Chair, International Program Committee, IFAC Symposium on Advances in Automotive Control, Orleans, France 2019 (2017 - present)
- Registration Chair, 1st IEEE Conference on Control Technology and Applications August 27-30, 2017 (2017 - 2017)

- Associate Editor, Frontiers Mechanical Engineering (2015 - present)
- Chair, Technical Committee on Automotive Controls, Institute of Electrical and Electronics Engineers Control Systems Society (IEEE CSS) (2015 - present)
- Vice Chair, Technical Committee on Automotive Control, International Federation of Automatic Control (IFAC) (2015 - present)
- Editor, IFAC-PapersOnLine Proceedings Volume 48, Issue 15, Pages 1-470, 4th IFAC Workshop on Engine and Powertrain Control, Simulation and Modeling (E-COSM) (2015 - 2015)
- International Programs Chair, ASME 2015 Dynamic Systems and Control Conference, Columbus, OH, 28-30 October 2015 (2015 - 2015)
- Program Chair, E-COSM'15 IFAC Workshop on Engine and Powertrain Control, Simulation and Modeling, Columbus, OH, 23 - 26 August 2015 (2015 - 2015)
- Associate Editor of the Conference Editorial Board (CDC, ACC, CCTA), Institute of Electrical and Electronics Engineers Control System Society (IEEE CSS) (2014 - present)
- Member, Energy Systems Technical Committee, American Society of Mechanical Engineers (ASME) (2012 - present)
- Associate Editor, SAE International Journal of Alternative Powertrains (2012 - 2019)
- Associate Editor, Dynamic Systems and Control Conference, American Society of Mechanical Engineers (ASME) (2011 - 2016)
- Member, International Federation of Automatic Control (2010 - present)
- Member, Technical Committee Automotive Control, International Federation of Automatic Control (IFAC) (2010 - present)
- Member, Institute of Electrical and Electronics Engineers (IEEE) (2009 - present)
- Member, American Society of Mechanical Engineering (ASME) (2009 - present)
- Member, Technical Committee on Automotive Controls, Institute of Electrical and Electronics Engineers Control System Society (IEEE CSS) (2009 - present)
- Member, Technical Committee on Fault Detection, Supervision and Safety of Technical Processes, International Federation of Automatic Control (IFAC) (2009 - present)
- Member, Society of Automotive Engineering (SAE) (2008 - present)
- Member, Automotive and Transportation Systems (ATS) Technical Committee, American Society of Mechanical Engineers (ASME) (2008 - present)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- Ph.D., University of Rome “Tor Vergata” , Control Engineering
- M.S., University of New Mexico , Electrical and Computer Engineering
- Laurea, University of Rome “Tor Vergata” , Information Technology and Electrical Engineering, summa cum laude

LINKS

- Stanford Energy Control Lab: https://onorilab.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Modeling, control and optimization of dynamic systems;

Model-based control in advanced propulsion systems;

Energy management control and optimization in HEVs and PHEVs;

Energy storage systems- Li-ion and PbA batteries, Supercapacitors;

Battery aging modeling, state of health estimation and life prediction for control;

Damage degradation modeling in interconnected systems

Teaching

COURSES

2025-26

- Electrochemical Energy Storage Systems: Modeling and Estimation: ENERGY 295 (Win)
- Energy storage and conversion systems: Solar Cells, Fuel Cells, Batteries: ENERGY 201C (Spr)

2024-25

- ESE Master's Graduate Seminar: ENERGY 351 (Aut)
- ESE PhD Graduate Seminar: ENERGY 352 (Aut)

2023-24

- Energy storage and conversion systems: Solar Cells, Fuel Cells, Batteries: ENERGY 201C (Spr)

2022-23

- Electrochemical Energy Storage Systems: Modeling and Estimation: ENERGY 295 (Win)
- Energy storage and conversion: Solar Cells, Fuel Cells, Batteries and Supercapacitors: ENERGY 293 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Brandon D'Agostino, Mateus De Castro Ribeiro, Andea Scott, Dhruv Suri

Postdoctoral Faculty Sponsor

Simone Fasolato, Gabriele Marini

Doctoral Dissertation Advisor (AC)

Muhammad Aadil Khan, Joseph Lucero, Nayantara Ramakrishnan

Doctoral Dissertation Co-Advisor (AC)

Aki Takahashi

Doctoral (Program)

Pietro Bosoni, Lynne Irvin, Andrea Lanubile, Sai Thatipamula

Publications

PUBLICATIONS

- **EV-EcoSim: A Grid-Aware Co-Simulation Platform for the Design and Optimization of Electric Vehicle Charging Infrastructure** *IEEE Transactions on Smart Grid*
  Balogun, E., Buechler, E., Bhela, S., Onori, S., Rajagopal, R.
  2023
- **Mean-Value Exergy Modeling of Internal Combustion Engines: Characterization of Feasible Operating Regions** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Pozzato, G., Rizzo, D. M., Onori, S.
  2022; 144 (6)
- **Lithium-ion battery aging dataset based on electric vehicle real-driving profiles.** *Data in brief*
  Pozzato, G., Allam, A., Onori, S.
  2022; 41: 107995

- **Exergy-based modeling framework for hybrid and electric ground vehicles** *APPLIED ENERGY*
  Dettu, F., Pozzato, G., Rizzo, D. M., Onori, S.
  2021; 300
- **Framework for energy storage selection to design the next generation of electrified military vehicles** *ENERGY*
  Catenaro, E., Rizzo, D. M., Onori, S.
  2021; 231
- **A Robust and Sleek Electrochemical Battery Model Implementation: A MATLAB (R) Framework** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Lee, S., Onori, S.
  2021; 168 (9)
- **Physics-based linear model predictive control strategy for three-way catalyst air/fuel ratio control** *PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART D-JOURNAL OF AUTOMOBILE ENGINEERING*
  Mamun, A., Zhu, Q., Hoffman, M., Onori, S.
  2021
- **Battery Health Prediction Using Fusion-Based Feature Selection and Machine Learning** *IEEE TRANSACTIONS ON TRANSPORTATION ELECTRIFICATION*
  Hu, X., Che, Y., Lin, X., Onori, S.
  2021; 7 (2): 382-398
- **Experimental analysis and analytical modeling of Enhanced-Ragone plot** *APPLIED ENERGY*
  Catenaro, E., Rizzo, D. M., Onori, S.
  2021; 291
- **Experimental data of lithium-ion batteries under galvanostatic discharge tests at different rates and temperatures of operation.** *Data in brief*
  Catenaro, E., Onori, S.
  2021; 35: 106894
- **Multistage Time-Optimal Control for Synchronization Process in Electric-Driven Mechanical Transmission With Angle Alignment Considering Torque Response Process** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Lu, Z., Tian, G., Onori, S.
  2021; 143 (4)
- **On Rigorous Model-Order Reduction of the Thermal and Oxygen Storage Dynamics of Three Way Catalytic Converters** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Dettu, F., Onori, S.
  2021; 143 (3)
- **Linearized Versus Nonlinear Observability Analysis for Lithium-Ion Battery Dynamics: Why Respecting the Nonlinearities Is Key for Proper Observer Design** *IEEE ACCESS*
  Allam, A., Onori, S.
  2021; 9: 163431-163440
- **Fast Charging-Minimum Degradation Optimal Control of Series-Connected Battery Modules with DC/DC Bypass Converters**
  Azimi, V., Allam, A., Joe, W., Choi, Y., Onori, S., IEEE
  IEEE.2021: 231-236
- **Offline multiobjective optimization for fast charging and reduced degradation in lithium ion battery cells**
  Lam, F., Allam, A., Joe, W., Choi, Y., Onori, S., IEEE
  IEEE.2021: 4441-4446
- **Pushing the Eenvelope in Battery Estimation Algorithms.** *iScience*
  Allam, A., Catenaro, E., Onori, S.
  2020; 23 (12): 101847
- **Stochastic capacity loss and remaining useful life models for lithium-ion batteries in plug-in hybrid electric vehicles** *JOURNAL OF POWER SOURCES*

Chu, A., Allam, A., Arenas, A., Rizzoni, G., Onori, S.
2020; 478

- **Aging-Aware Optimal Energy Management Control for a Parallel Hybrid Vehicle Based on Electrochemical-Degradation Dynamics** *IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY*
  De Pascali, L., Biral, F., Onori, S.
  2020; 69 (10): 10868–78
- **Hierarchical Coordination of Two-Time Scale Microgrids With Supply-Demand Imbalance** *IEEE TRANSACTIONS ON SMART GRID*
  Du, Y., Wu, J., Li, S., Long, C., Onori, S.
  2020; 11 (5): 3726–36
- **Advanced Fault Diagnosis for Lithium-Ion Battery Systems: A Review of Fault Mechanisms, Fault Features, and Diagnosis Procedures** *IEEE INDUSTRIAL ELECTRONICS MAGAZINE*
  Hu, X., Zhang, K., Liu, K., Lin, X., Dey, S., Onori, S.
  2020; 14 (3): 65–91
- **A Data-Driven Multiscale Framework to Estimate Effective Properties of Lithium-Ion Batteries from Microstructure Images** *TRANSPORT IN POROUS MEDIA*
  Korneev, S., Arunachalam, H., Onori, S., Battiato, I.
  2020; 134 (1): 173–94
- **Modeling the Flow and Transport Dynamics in Gasoline Particulate Filters to Improve Filtration Efficiency** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Korneev, S., Onori, S.
  2020; 142 (6)
- **Experimental Validation of Nonlinear Model Predictive Control for a Heavy-Duty Diesel Engine Waste Heat Recovery System** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Xu, B., Yebi, A., Rathod, D., Onori, S., Filipi, Z., Hoffman, M.
  2020; 142 (5)
- **A Rigorous Model Order Reduction Framework for Waste Heat Recovery Systems Based on Proper Orthogonal Decomposition and Galerkin Projection** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Xu, B., Yebi, A., Hoffman, M., Onori, S.
  2020; 28 (2): 635–43
- **A comparative analysis of dynamic evaporator models for organic Rankine cycle waste heat recovery systems** *APPLIED THERMAL ENGINEERING*
  Xu, B., Rathod, D., Yebi, A., Onori, S., Filipi, Z., Hoffman, M.
  2020; 165
- **Modeling the thermal and soot oxidation dynamics inside a ceria-coated gasoline particulate filter** *CONTROL ENGINEERING PRACTICE*
  Arunachalam, H., Pozzato, G., Hoffman, M. A., Onori, S.
  2020; 94
- **Online Capacity Estimation for Lithium-Ion Battery Cells via an Electrochemical Model-Based Adaptive Interconnected Observer** *IEEE Transactions on Control Systems Technology*
  Allam, A., Onori, S.
  2020: 16
- **Offline Multiobjective Optimization for Fast Charging and Reduced Degradation in Lithium-ion Battery Cells using Electrochemical Dynamics** *IEEE Control Systems Letters*
  Lam, F., Allam, A., Joe, W., Choi, Y., Onori, S.
  2020
- **A Novel Lithium-ion Battery Pack Modeling Framework - Series-Connected Case Study**
  Weaver, T., Allam, A., Onori, S., IEEE
  IEEE.2020: 365–72
- **Time-Optimal Coordination Control for the Gear-Shifting Process in Electric-Driven Mechanical Transmission (Dog Clutch) without Impacts** *SAE INTERNATIONAL JOURNAL OF ELECTRIFIED VEHICLES*

Lu, Z., Tian, G., Onori, S.
2020; 9 (2): 155–68

- **Coordinated Energy Dispatch of Autonomous Microgrids With Distributed MPC Optimization** *IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS*
  Du, Y., Wu, J., Li, S., Long, C., Onori, S.
  2019; 15 (9): 5289–98
- **A comprehensive review of organic rankine cycle waste heat recovery systems in heavy-duty diesel engine applications** *RENEWABLE & SUSTAINABLE ENERGY REVIEWS*
  Xu, B., Rathod, D., Yebi, A., Filipi, Z., Onori, S., Hoffman, M.
  2019; 107: 145–70
- **Full Homogenized Macroscale Model and Pseudo-2-Dimensional Model for Lithium-Ion Battery Dynamics: Comparative Analysis, Experimental Verification and Sensitivity Analysis** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Arunachalam, H., Onori, S.
  2019; 166 (8): A1380–A1392
- **An Integrated Design and Control Optimization Framework for Hybrid Military Vehicle Using Lithium-Ion Battery and Supercapacitor as Energy Storage Devices** *IEEE TRANSACTIONS ON TRANSPORTATION ELECTRIFICATION*
  Abdullah-Al Mamun, Liu, Z., Rizzo, D. M., Onori, S.
  2019; 5 (1): 239–51
- **A switched and scheduled design for model recovery anti-windup of linear plants** *EUROPEAN JOURNAL OF CONTROL*
  Cristofaro, A., Galeani, S., Onori, S., Zaccarian, L.
  2019; 46: 23–35
- **A Novel Model-Based Estimation Scheme for Battery-Double-Layer Capacitor Hybrid Energy Storage Systems** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Dey, S., Mohon, S., Ayalew, B., Arunachalam, H., Onori, S.
  2019; 27 (2): 689–702
- **Aging characterization and modeling of nickel-manganese-cobalt lithium-ion batteries for 48V mild hybrid electric vehicle applications** *JOURNAL OF ENERGY STORAGE*
  Liu, Z., Ivanco, A., Onori, S.
  2019; 21: 519–27
- **Process noise quantification in Kalman filters with application to electrochemical Lithium-ion battery state estimation**
  Weber, R. M., Spragg, R., Hoffmann, K., Onori, S., IEEE
  IEEE.2019: 1995–2000
- **EXPERIMENTAL INVESTIGATION OF SOOT ACCUMULATION AND REGENERATION IN A CATALYZED GASOLINE PARTICULATE FILTER UTILIZING PARTICULATE QUANTIFICATION AND GAS SPECIATION MEASUREMENTS**
  Rathod, D., Onori, S., Filipi, Z., Hoffman, M., ASME
  AMER SOC MECHANICAL ENGINEERS.2019
- **DESIGN AND EXPERIMENTAL VALIDATION OF A SPATIALLY DISCRETIZED, CONTROL-ORIENTED TEMPERATURE MODEL FOR A CERIA-WASHCOATED GASOLINE PARTICULATE FILTER**
  Moser, S., Onori, S., Hoffman, M., ASME
  AMER SOC MECHANICAL ENGINEERS.2019
- **Exploring the dependence of cell aging dynamics on thermal gradient in battery modules: A PDE-based time scale separation approach**
  Allam, A., Onori, S., IEEE
  IEEE.2019: 2380–85
- **An Economic Nonlinear Model Predictive Control Strategy for SI Engines: Model-Based Design and Real-Time Experimental Validation** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Zhu, Q., Onori, S., Prucka, R.
  2019; 27 (1): 296–310
- **An Interconnected Observer for Concurrent Estimation of Bulk and Surface Concentration in the Cathode and Anode of a Lithium-ion Battery** *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*

Allam, A., Onori, S.
2018; 65 (9): 7311–21

- **Combined Battery Design Optimization and Energy Management of a Series Hybrid Military Truck** *SAE INTERNATIONAL JOURNAL OF ALTERNATIVE POWERTRAINS*
  Liu, Z., Mamun, A., Rizzo, D. M., Onori, S.
  2018; 7 (2): 155–67
- **What if the Doyle-Fuller-Newman model fails? A new macroscale modeling framework**
  Arunachalam, H., Onori, S., IEEE
  IEEE.2018: 5702–7
- **Design and experimental validation of a physics-based oxygen storage — thermal model for three way catalyst including aging** *Control Engineering Practice*
  Sabatini, S., Gelmini, S., Hoffman, M. A., Onori, S.
  2017; 68: 89-101
- **Modeling the Thermal Dynamics inside a Ceria-Coated Gasoline Particulate Filter**
  Arunachalam, H., Pozzato, G., Hoffman, M. A., Onori, S., IEEE
  IEEE.2017: 99–105
- **Multi-channel physics-based modeling and experimental validation of an uncoated gasoline particulate filter in clean operating conditions**
  Pozzato, G., Hoffman, M. A., Onori, S., IEEE
  IEEE.2017: 5392–97
- **Nonlinear Model Predictive Air Path Control for Turbocharged SI Engines with Low Pressure EGR and a Continuous Surge Valve**
  Zhu, Q., Koli, R., Feng, L., Onori, S., Prucka, R., IEEE
  IEEE.2017: 4741–46
- **Reduced Order Model Design for Three Way Catalytic Converter Temperature Dynamics**
  Godi, R., Onori, S., IEEE
  IEEE.2017: 886–91
- **Development and Experimental Validation of a Dual Extended Kalman Filter for Three Way Catalytic Converter**
  Gelmini, S., Sabatini, S., Hoffman, M. A., Onori, S., IEEE
  IEEE.2017: 5386–91
- **Continuum scale modeling of Exhaust Gas Transport in Gasoline Particulate Filters: an applicability regime approach**
  Pozzato, G., Arunachalam, H., Onori, S., IEEE
  IEEE.2017: 5398–5403
- **Multiscale Modeling Approach to determine Effective Lithium-Ion Transport Properties**
  Arunachalam, H., Korneev, S., Battiato, I., Onori, S., IEEE
  IEEE.2017: 92–97
- **Transient Power Optimization of an Organic Rankine Cycle Waste Heat Recovery System for Heavy-Duty Diesel Engine Applications** *SAE International Journal of Alternative Powertrains*
  Xu, B., Yebi, A., Onori, S., Filipi, Z., Liu, X., Shutty, J., Anschel, P., Hoffman, M.
  2017; 6 (1)
- **Transient dynamic modeling and validation of an organic Rankine cycle waste heat recovery system for heavy duty diesel engine applications** *Applied Energy*
  Xu, B., Rathod, D., Kulkarni, S., Yebi, A., Filipi, Z., Onori, S., Hoffman, M.
  2017; 205: 260-279
- **Model Predictive Control of an Organic Rankine Cycle System** *Energy Procedia*
  Liu, X., Yebi, A., Anschel, P., Shutty, J., Xu, B., Hoffman, M., Onori, S.
  2017; 129: 184-191
- **Determining Three-Way Catalyst Age Using Differential Lambda Signal Response** *SAE International Journal of Engines*
  Rathod, D., Hoffman, M. A., Onori, S.

2017; 10 (3)

- **Synthesis and Experimental Validation of Battery Aging Test Profiles Based on Real-World Duty Cycles for 48V Mild Hybrid Vehicles** *IEEE Transactions on Vehicular Technology*
  Liu, Z., Onori, S., IVANCO, A.
  2017
- **Estimation and Predictive Control of a Parallel Evaporator Diesel Engine Waste Heat Recovery System** *IEEE Transactions on Control Systems Technology*
  Yebi, A., Xu, B., Liu, X., Shutty, J., Anschel, P., Onori, S., Hoffman, M.
  2017
- **Electrochemical Model-Based State of Charge and Capacity Estimation for a Composite Electrode Lithium-Ion Battery** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Bartlett, A., Marcicki, J., Onori, S., Rizzoni, G., Yang, X. G., Miller, T.
  2016; 24 (2): 384-399
- **A control-oriented cycle-life model for hybrid electric vehicle lithium ion batteries** *ENERGY*
  Suri, G., Onori, S.
  2016; 96: 644-653
- **Energy Management Design in Hybrid Electric Vehicles: A Novel Optimality and Stability Framework** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Mura, R., Utkin, V., Onori, S.
  2015; 23 (4): 1292-1307
- **Adaptive Pontryagin's Minimum Principle supervisory controller design for the plug-in hybrid GM Chevrolet Volt** *APPLIED ENERGY*
  Onori, S., Tribioli, L.
  2015; 147: 224-234
- **A control-oriented lithium-ion battery pack model for plug-in hybrid electric vehicle cycle-life studies and system design with consideration of health management** *JOURNAL OF POWER SOURCES*
  Cordoba-Arenas, A., Onori, S., Rizzoni, G.
  2015; 279: 791-808
- **Capacity and power fade cycle-life model for plug-in hybrid electric vehicle lithium-ion battery cells containing blended spinel and layered-oxide positive electrodes** *JOURNAL OF POWER SOURCES*
  Cordoba-Arenas, A., Onori, S., Guezennec, Y., Rizzoni, G.
  2015; 278: 473-483
- **On Veracity of Macroscopic Lithium-Ion Battery Models** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Arunachalam, H., Onori, S., Battiato, I.
  2015; 162 (10): A1940-A1951
- **Energy Management of Hybrid Electric Vehicles: 15 Years of Development at the Ohio State University** *OIL & GAS SCIENCE AND TECHNOLOGY-REVUE D IFP ENERGIES NOUVELLES*
  Rizzoni, G., Onori, S.
  2015; 70 (1): 41-54
- **Cloud-Based Velocity Profile Optimization for Everyday Driving: A Dynamic-Programming-Based Solution** *IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS*
  Ozatay, E., Onori, S., Wollaeger, J., Ozguner, U., Rizzoni, G., Filev, D., Michelini, J., Di Cairano, S.
  2014; 15 (6): 2491-2505
- **Insight into the HEV/PHEV optimal control solution based on a new tuning method** *CONTROL ENGINEERING PRACTICE*
  Guardiola, C., Pla, B., Onori, S., Rizzoni, G.
  2014; 29: 247-256
- **A control benchmark on the energy management of a plug-in hybrid electric vehicle** *CONTROL ENGINEERING PRACTICE*
  Sciarretta, A., Serrao, L., Dewangan, P. C., Tona, P., Bergshoeff, E. N., Bordons, C., Charmpa, L., Elbert, P., Eriksson, L., Hofman, T., Hubacher, M., Isenegger, R., Lacandia, et al

2014; 29: 287-298

- **An optimal regulation strategy with disturbance rejection for energy management of hybrid electric vehicles** *AUTOMATICA*
  Sampathnarayanan, B., Onori, S., Yurkovich, S.
  2014; 50 (1): 128-140

- **Modeling and experimental validation of a Hybridized Energy Storage System for automotive applications** *JOURNAL OF POWER SOURCES*
  Fiorenti, S., Guanetti, J., Guezennec, Y., Onori, S.
  2013; 241: 112-120

- **Modelling and control of a brake system for an extended range electric vehicle equipped with axle motors** *INTERNATIONAL JOURNAL OF VEHICLE DESIGN*
  Bayar, K., Biasini, R., Onori, S., Rizzoni, G.
  2012; 58 (2-4): 399-426

- **A Comparative Analysis of Energy Management Strategies for Hybrid Electric Vehicles** *JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME*
  Serrao, L., Onori, S., Rizzoni, G.
  2011; 133 (3)

- **MODEL-BASED FAULT DIAGNOSIS FOR NIMH** *PROCEEDINGS OF THE ASME DYNAMIC SYSTEMS AND CONTROL CONFERENCE 2008, PTS A AND B*
  Suozzo, C., Onori, S., Rizzoni, G.
  2009: 1349-1355

- **EXPERIMENTAL CALIBRATION AND VALIDATION OF FAULT DIAGNOSIS AND PROGNOSIS ALGORITHMS FOR AUTOMOTIVE ELECTRIC POWER GENERATION AND STORAGE SYSTEM** *PROCEEDINGS OF THE ASME DYNAMIC SYSTEMS AND CONTROL CONFERENCE 2008, PTS A AND B*
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