

# **2025 IEEE Symposia on Computational Intelligence for Energy, Transport and Environmental Sustainability (CIETES Companion 2025)**

**Trondheim, Norway  
17-20 March 2025**



IEEE Catalog Number: CFP258B7-POD  
ISBN: 979-8-3315-1969-8

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP258B7-POD
ISBN (Print-On-Demand):	979-8-3315-1969-8
ISBN (Online):	979-8-3315-1968-1

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Table of Contents

- 1 Online Detection of Water Contamination Under Concept Drift  
*jin li (university of Cyprus)\*; kleanthis Malialis (university of cyprus); Stelios Vrachimis (university of cyprus); Marios Polycarpou (university of Cyprus)*
- 6 Urban Water Consumption Forecasting Using Deep Learning and Correlated District Metered Areas  
*Kleanthis Malialis (University of Cyprus)\*; Nefeli Mavri (University of Cyprus); Stelios Vrachimis (University of Cyprus); Marios Kyriakou (University of Cyprus); Demetrios Eliades (University of Cyprus); Marios Polycarpou (University of Cyprus)*
- 11 Stabilise Power Grids from fluctuating Renewable Energy Sources production with Artificial Immune System  
*Antoine Lihard (Heriot-Watt University)\*; Wei Pang (Heriot-Watt University)*
- 16 Adverse Weather Benchmarks and Dataset for Object Detection in Autonomous Driving  
*Dominik Weikert (Otto-von-Guericke University Magdeburg)\*; Adrian Köring (Otto-von-Guericke University Magdeburg); Christoph Steup (Otto-von-Guericke University Magdeburg)*
- 21 Multi-Objective Reinforcement Learning for the Control of Storm-water Systems under Distributional Shift  
*Daisy Welham (Swansea University)\*; Sara Sharifzadeh (Swansea University); Liam Butler (Dŷr Cymru Welsh Water); Chedly Tizaoui (Swansea University)*
- 26 Permutation Optimization using Multivariate Dependent Estimation of Distribution Algorithm  
*Yuyang Guo (Beijing Institute of Technology); Chu-ge Wu (Beijing Institute of Technology)\*; Zhuo Li (Beijing Institute of Technology); Yuanqing Xia (Beijing Institute of Technology)*
- 31 Multi-Objective Optimization Algorithms For Energy Management System in Microgrids Including Control Strategy  
*Saiful Islam (Otto-von-Guericke-University Magdeburg)\*; Sanaz Mostaghim (Otto von Guericke University Magdeburg); Michael Hartmann (SRH University of Applied Sciences)*
- 36 Asynchronous differential evolution with Lissajous mutation for efficient energy management of plug-in electric vehicles  
*Arturo Valdivia (Universidad de Guadalajara); Angel Casas-Ordaz (Universidad de Guadalajara); Itzel Aranguren (Universidad de Guadalajara); Diego Oliva (Universidad de Guadalajara)\*; Seyed Jalaleddin Mousavirad (Mid Sweden University)*
- 41 Timely predicting Power Mosfet failure in EV: AI based methodology and deployment at the edge

*Robin Faro (Deepsensing SRL)\*; Alessandro Strano (Deepsensing SRL); Francesco Cancelliere (University of Catania); Raffaele Mineo (University of Catania)*

- 46 Data-Driven Adaptive Control for Frequency Perturbations in Power Systems with PV-SmartParks

*Ali Arzani (Clemson University)\*; Ganesh K. Venayagamoorthy (Clemson University)*