Guangzhong Dong

Professor | Director of DiB-lab
SISE Dean's Assistant
Pearl River Talent Plan (Young Scholar), Guangdong
Intelligence Science and Engineering
Harbin Institute of Techonlogy, Shenzhen

Office: A203 Build A
HIT Campus of University Town
Shenzhen, Guangdong China 518055
Cell: +86 18928490623
dongguangzhong@hit.edu.cn
https://dib-lab.com

Work Experience

Full Professor, SISE (2025.01-Now) — **Harbin Institute of Technology, Shenzhen**
Assoc. Prof., SISE (2021.09-2024.12) — **Harbin Institute of Technology, Shenzhen**
Postdoctoral (2020.04-2021.09) — **Nanyang Technology University**
Postdoctoral (2018.12-2020.03) — **Charmers University of Technology**
Postdoctoral (2018.07-2018.11) — **City University of Hong Kong**

Education

Ph.D., Control Science and Engineering (2018) — **University of Science and Technology of China**
Dissertation: *Research on states estimation and optimal control of micro-grid system based on Bayesian method*
Advisor: Prof. *Zonghai Chen*

B.Eng., Automation (2013) — **University of Science and Technology of China**
Major Field: Automation

Research Interests

Theory: Control & Estimation, Optimization, Data Science, Machine Learning
Applications: Batteries, Power&Energy systems, Robotics, Manufacturing, Electric Vehicles

Honors & Awards

Outstanding Staff/Faculty Award, Harbin Institute of Technology (2025.11)
TC-II Best Student Paper (as Advisor, student is Fukang Shen) (2025.11)
IEEE Industrial Electronics Technical Committee on Indusstrial Informatics
Best Paper Award (as Advisor, student is Daren Chen) (2025.07)
2025 IEEE 26th China Conference on System Simulation Technology and its Application, Shenzhen.
Excellent Undergraduate's Thesis of HIT (as Advisor, student is Xuhao Deng) (2025.06)
Excellent Master's Thesis of HIT (as Advisor, student is Zhipeng Zhu) (2025.03)
Pearl River Talent Plan (Young Scholar), Guangdong (2023)
The Stanford/Elsevier Top 2% Scientists List (2021-2025)
Shenzhen "Pengcheng Peacock" Specially Appointed Position (Category C)(2021)
President's Special Prize, Chinese Academy of Sciences (CAS) (2018)
Outstanding Doctoral Graduate, USTC (2018)
National Scholarship for Doctoral Students, USTC (2016)
National Scholarship for Master's Students, USTC (2015)
Guanghua Scholarship for Graduate Students, USTC (2014)

Publications

Total Citations≥ 4800 | *h-index* = 32 | *i10-index* = 47 (Google Scholar, April 2026)

Peer-Reviewed Journals (First or Corresponding authored)

[J1] Xie, S., Dong, G., Chen, H., and Lou, Y., "Realistic multi-fault diagnostics of millions-scale Li-ion batteries with rapid unsupervised learning," in: *Cell Reports Physical Science* 7.3 (2026), p. 103154, DOI: **10.1016/j.xcrp.2026.103154**.

[J2] Chen, H., Dong, G., Wang, Y., Yu, J., Wu, L., and Lou, Y., "Data-Driven Battery Health Prognosis Using Scalable Deep Recurrent Structure and Partial Fast-Charging Profiles," in: *IEEE Trans. Veh. Tech.* 74.11 (Nov. 2025), pp. 17034–17046, DOI: **10.1109/TVT.2025.3574748**.

[J3] Hua, N., Chen, H., and Dong, G., "Deep transfer learning-enabled battery health prognosis using impedance spectrum data," in: *Journal of Energy Storage* 132.C (Oct. 2025), p. 117855, DOI: **10.1016/j.est.2025.117855**.

[J4] Shen, F., Dong, G., Zhu, Z., Sun, L., and Lou, Y., "An Online Model-Based Diagnosis Method for Micro-Short Circuits in Series-Connected Lithium-Ion Battery Packs," in: *IEEE Transactions on Industrial Electronics* 72.12 (Dec. 2025), pp. 13141–13150, DOI: **10.1109/TIE.2025.3577304**.

[J5] Chen, H., Dong, G., Xie, S., Wang, Y., and Lou, Y., "A Scalable Recurrent Structure With Fast Transfer Learning for Lithium-Ion Battery State of Charge Estimation at Different Ambient Temperatures," in: *IEEE Transactions on Intelligent Transportation Systems* 26.10 (Oct. 2025), pp. 14792–14806, DOI: **10.1109/TITS.2025.3580152**.

[J6] Chen, D., Sun, L., Shen, F., Gao, G., Lou, Y., and Dong, G., "A fuzzy extended PI observer for state of charge estimation of LiFePO4 batteries across broad temperature ranges," in: *Journal of Energy Storage* 128 (Aug. 2025), p. 116964, DOI: **10.1016/j.est.2025.116964**.

[J7] Xie, S., Dong, G., Chen, H., Sun, L., and Lou, Y., "Data-Driven Battery Health Prognostics Using Time-Frequency Feature Maps and Spatial-Temporal Neural Network," in: *IEEE Transactions on Vehicular Technology* 74.5 (May 2025), pp. 8226–8237, DOI: **10.1109/TVT.2025.3529734**.

[J8] Gao, G., Dong, G., Lou, Y., Sun, L., and Wei, J., "Physics-Informed Data-Driven Power Capacity Prediction of Lithium-Ion Battery Against Various Temperatures," in: *IEEE Trans. Intelligent Transportation Systems* 26.6 (June 2025), pp. 8670–8681, DOI: **10.1109/TITS.2025.3549458**.

[J9] Dong, G., Hua, N., Chen, H., and Lou, Y., "Deep Transfer Learning Enabled State of Health Estimation of Lithium-Ion Battery Using Voltage Sample Entropy Under Fast Charging Profiles," in: *IEEE Transactions on Transportation Electrification* 11.1 (Feb. 2025), pp. 3703–3714, DOI: **10.1109/TTE.2024.3445344**.

[J10] Zhu, Z., Dong, G., Lou, Y., Sun, L., Yu, J., Wu, L., and Wei, J., "MPC-Guided Deep Reinforcement Learning for Optimal Charging of Lithium-Ion Battery With Uncertainty," in: *IEEE Transactions on Transportation Electrification* 11.1 (Feb. 2025), pp. 4408–4419, DOI: **10.1109/TTE.2024.3462769**.

[J11] Dong, G., Shen, F., Sun, L., Zhang, M., and Wei, J., "A Bayesian Inferred Health Prognosis and State of Charge Estimation for Power Batteries," in: *IEEE Transactions on Instrumentation and Measurement* 74 (2025), DOI: **10.1109/TIM.2024.3497053**.

[J12] Dong, G., Gao, G., Lou, Y., Yu, J., Chen, C., and Wei, J., "Hybrid Physics and Data-Driven Electrochemical States Estimation for Lithium-ion Batteries," in: *IEEE Transactions on Energy Conversion* 39.4 (Dec. 2024), pp. 2689–2700, DOI: **10.1109/TEC.2024.3386784**.

[J13] Dong, G., Feng, Y., Lou, Y., Zhang, M., and Wei, J., "Data-Driven Fast Charging Optimization for Lithium-Ion Battery Using Bayesian Optimization With Fast Convergence," in: *IEEE Transactions on Transportation Electrification* 10.2 (June 2024), pp. 4173–4183, DOI: **10.1109/TTE.2023.3311813**.

[J14] Dong, G., Zhu, Z., Lou, Y., Yu, J., Wu, L., and Wei, J., "Optimal Charging of Lithium-Ion Battery Using Distributionally Robust Model Predictive Control With Wasserstein Metric," in: *IEEE Transactions on Industrial Informatics* 20.5 (May 2024), pp. 7630–7640, DOI: **10.1109/TII.2024.3363079**.

[J15] Wei, J., Chen, C., and Dong, G., "Global Sensitivity Analysis for Impedance Spectrum Identification of Lithium-Ion Batteries Using Time-Domain Response," in: *IEEE Transactions on Industrial Electronics* 70.4 (Apr. 2023), pp. 3825–3835, DOI: **10.1109/TIE.2022.3179549**.

[J16] Dong, G., Feng, Y., Wang, Y., and Wei, J., "Probabilistic dischargeable time forecasting of power batteries via statistical characterization of future loading profiles," in: *Journal of Energy Storage* 59 (Mar. 2023), p. 106488, DOI: **10.1016/j.est.2022.106488**.

[J17] Han, W., Kersten, A., Zou, C., Wik, T., Huang, X., and Dong, G., "Analysis and Estimation of the Maximum Switch Current During Battery System Reconfiguration," in: *IEEE Transactions on Industrial Electronics* 69.6 (June 2022), pp. 5931–5941, DOI: **10.1109/TIE.2021.3091923**.

[J18] Dong, G., Xu, Y., and Wei, Z., "A Hierarchical Approach for Finite-Time H-inf State-of-Charge Observer and Probabilistic Lifetime Prediction of Lithium-Ion Batteries," in: *IEEE Transactions on Energy Conversion* 37.1 (Mar. 2022), pp. 718–728, DOI: **10.1109/TEC.2021.3109896**.

[J19] Dong, G., Han, W., and Wang, Y., "Dynamic Bayesian Network-Based Lithium-Ion Battery Health Prognosis for Electric Vehicles," in: *IEEE Transactions on Industrial Electronics* 68.11 (Nov. 2021), pp. 10949–10958, DOI: **10.1109/TIE.2020.3034855**.

[J20] Dong, G., and Wei, J., "A physics-based aging model for lithium-ion battery with coupled chemical/mechanical degradation mechanisms," in: *Electrochimica Acta* 395 (Nov. 2021), DOI: **10.1016/j.electacta.2021.139133**.

[J21] Dong, G., and Lin, M., "Model-based thermal anomaly detection for lithium-ion batteries using multiple-model residual generation," in: *Journal of Energy Storage* 40 (Aug. 2021), p. 102740, DOI: **10.1016/j.est.2021.102740**.

[J22] Dong, G., Yang, F., Tsui, K.-L., and Zou, C., "Active Balancing of Lithium-Ion Batteries Using Graph Theory and A-Star Search Algorithm," in: *IEEE Transactions on Industrial Informatics* 17.4 (Apr. 2021), pp. 2587–2599, DOI: **10.1109/TII.2020.2997828**.

[J23] Dong, G., and Wei, J., "Determination of the load capability for a lithium-ion battery pack using two time-scale filtering," in: *Journal of Power Sources* 480 (Dec. 2020), p. 229056, DOI: **10.1016/j.jpowsour.2020.229056**.

[J24] Dong, G., Yang, F., Wei, Z., Wei, J., and Tsui, K.-L., "Data-Driven Battery Health Prognosis Using Adaptive Brownian Motion Model," in: *IEEE Transactions on Industrial Informatics* 16.7 (July 2020), pp. 4736–4746, DOI: **10.1109/TII.2019.2948018**.

[J25] Wei, J., Dong, G., and Chen, Z., "Lyapunov-Based Thermal Fault Diagnosis of Cylindrical Lithium-Ion Batteries," in: *IEEE Transactions on Industrial Electronics* 67.6 (June 2020), pp. 4670–4679, DOI: **10.1109/TIE.2019.2931275**.

[J26] Zhang, C., Zhu, Y., Dong, G., and Wei, J., "Data-driven lithium-ion battery states estimation using neural networks and particle filtering," in: *International Journal of Energy Research* 43.14 (Nov. 2019), pp. 8230–8241, DOI: **10.1002/er.4820**.

[J27] Dong, G., Chen, Z., and Wei, J., "Sequential Monte Carlo Filter for State-of-Charge Estimation of Lithium-Ion Batteries Based on Auto Regressive Exogenous Model," in: *IEEE Transactions on Industrial Electronics* 66.11 (Nov. 2019), pp. 8533–8544, DOI: **10.1109/TIE.2018.2890499**.

[J28] Yang, F., Song, X., Dong, G., and Tsui, K.-L., "A coulombic efficiency-based model for prognostics and health estimation of lithium-ion batteries," in: *Energy* 171 (Mar. 2019), pp. 1173–1182, DOI: **10.1016/j.Energy.2019.01.083**.

[J29] Dong, G., and Chen, Z., "Data-Driven Energy Management in a Home Microgrid Based on Bayesian Optimal Algorithm," in: *IEEE Transactions on Industrial Informatics* 15.2 (Feb. 2019), pp. 869–877, DOI: **10.1109/TII.2018.2820421**.

[J30] Dong, G., Chen, Z., Wei, J., and Ling, Q., "Battery Health Prognosis Using Brownian Motion Modeling and Particle Filtering," in: *IEEE Transactions on Industrial Electronics* 65.11 (Nov. 2018), pp. 8646–8655, DOI: **10.1109/TIE.2018.2813964**.

[J31] Dong, G., Wei, J., and Chen, Z., "Constrained Bayesian dual-filtering for state of charge estimation of lithium-ion batteries," in: *INTERNATIONAL JOURNAL OF ELECTRICAL POWER & Energy SYSTEMS* 99 (July 2018), pp. 516–524, DOI: **10.1016/j.ijepes.2018.02.005**.

[J32] Dong, G., Wei, J., Chen, Z., Sun, H., and Yu, X., "Remaining dischargeable time prediction for lithium-ion batteries using unscented Kalman filter," in: *Journal of Power Sources* 364 (Oct. 2017), pp. 316–327, DOI: **10.1016/j.jpowsour.2017.08.040**.

[J33] Dong, G., Wei, J., and Chen, Z., "Kalman filter for onboard state of charge estimation and peak power capability analysis of lithium-ion batteries," in: *Journal of Power Sources* 328 (Oct. 2016), pp. 615–626, DOI: **10.1016/j.jpowsour.2016.08.065**.

[J34] Dong, G., Wei, J., Zhang, C., and Chen, Z., "Online state of charge estimation and open circuit voltage hysteresis modeling of LiFePO4 battery using invariant imbedding method," in: *Applied Energy* 162 (Jan. 2016), pp. 163–171, DOI: **10.1016/j.apEnergy.2015.10.092**.

[J35] Dong, G., Chen, Z., Wei, J., Zhang, C., and Wang, P., "An online model-based method for state of Energy estimation of lithium-ion batteries using dual filters," in: *Journal of Power Sources* 301 (Jan. 2016), pp. 277–286, DOI: **10.1016/j.jpowsour.2015.10.011**.

[J36] Dong, G., Zhang, X., Zhang, C., and Chen, Z., "A method for state of Energy estimation of lithium-ion batteries based on neural network model," in: *Energy* 90.1 (Oct. 2015), pp. 879–888, DOI: **10.1016/j.Energy.2015.07.120**.

Peer-Reviewed Journals (Co-authored)

[J37] Lu, Q., Peng, W., Chen, H., Hu, R., Dong, G., Huang, W. M., Han, Q., Guo, H., Yuan, B., and Lou, Y., "Incorporating dynamic mode decomposition and domain adversarial training for cross-domain state of health estimation of lithium-ion batteries," in: *Journal of Power Sources* 675 (May 2026), DOI: **10.1016/j.jpowsour.2026.239836**.

[J38] Sun, L., Wang, H., and Dong, G., "Analysis and mitigation of circulating currents for grid-forming DERs during parallel black-start in islanded systems," in: *International Journal of Electrical Power & Energy Systems* 175 (Feb. 2026), DOI: **10.1016/j.ijepes.2026.111678**.

[J39] Guo, J., Dong, G., and Wei, J., "Battery state of health estimation based on automatic feature selection and streamlined temporal focus," in: *Journal of Energy Storage* 141.A (Jan. 2026), DOI: **10.1016/j.est.2025.119160**.

[J40] He, J., Han, X., Yang, X., Chen, C., Wei, J., and Dong, G., "User Preference-Adaptive Battery Fast Charging Strategy Considering Temperature Rising Based on Transfer Reinforcement Learning," in: *IEEE Transactions on Industrial Electronics* 72.10 (Oct. 2025), pp. 10327–10337, DOI: **10.1109/TIE.2025.3558034**.

[J41] Xie, L., Wei, J., Li, X., Chen, C., Chen, H., and Dong, G., "Deep Learning-Enabled Fault Diagnosis of Lithium-Ion Batteries Using Real-World Vehicle Data With Gramian Angular Difference Fields," in: *IEEE Transactions on Industrial Informatics* 21.7 (July 2025), pp. 5622–5632, DOI: **10.1109/TII.2025.3556068**.

[J42] Mi, W., Yu, J., Zhao, F., Dong, G., and Zhao, H., "Complex-Vector Flux-Linkage Envelope Demodulation for High-Speed Resolver-to-Digital Conversion System," in: *IEEE Transactions on Industrial Electronics* 72.9 (Sept. 2025), pp. 9758–9768, DOI: **10.1109/TIE.2025.3536538**.

[J43] Wu, Q., Zhang, M., Xu, X., Dong, G., Wang, J., Leung, D. Y. C., Leung, M. K. H., and Wang, Y., "Effect of channel rib on oxygen removal in 3D porous transport layer of proton exchange membrane electrolysis cell, a numerical investigation," in: *International Journal of Hydrogen Energy* 106 (Mar. 2025), pp. 171–185, DOI: **10.1016/j.ijhydene.2025.01.450**.

[J44] Dai, H., Zhang, Z., Zhang, M., Xu, X., Dong, G., Leung, D. Y. C., Leung, M. K. H., and Wang, Y., "Combined cooling and power: Investigating the coupling effect between a microfluidic fuel cell and a heating chip," in: *Chemical Engineering Journal* 504 (Jan. 2025), DOI: **10.1016/j.cej.2024.159031**.

[J45] Wang, Y., Dong, G., Yu, J., Qin, C., Feng, Y., Deng, Y., and Zhang, M., "In-situ green hydrogen production from offshore wind farms, a prospective review," in: *Renewable Energy* 239 (Feb. 2025), DOI: **10.1016/j.renene.2024.122099**.

[J46] Wang, Y., Xu, X., Dong, G., Zhang, M., Jiao, K., and Leung, D. Y. C., "Flexible fuel cells: A prospective review," in: *Energy Reviews* 3.4 (Dec. 2024), DOI: **10.1016/j.enrev.2024.100099**.

[J47] Wu, Q., Wu, B., Xu, X., Dong, G., Zhang, M., Leung, D. Y. C., and Wang, Y., "Segmented catalyst layer with varied catalyst loading to improve the cost performance of proton exchange membrane electrolysis cell, a numerical investigation," in: *International Journal of Hydrogen Energy* 89 (Nov. 2024), pp. 401–412, DOI: **10.1016/j.ijhydene.2024.09.364**.

[J48] Zhang, Z., Dai, H., Xu, X., Dong, G., Zhang, M., Luo, S., Leung, D. Y. C., and Wang, Y., "Investigation of electrode scaling-up strategies for paper-based microfluidic fuel cells," in: *Renewable Energy* 235 (Nov. 2024), DOI: **10.1016/j.renene.2024.121316**.

[J49] Wu, B., Wu, Q., Xu, X., Dong, G., Zhang, M., Leung, D. Y. C., and Wang, Y., "Microfluidic fuel cell with arc-shaped electrodes to adapt to its mixing zone, a simulation study," in: *Applied Energy* 376.A (Dec. 2024), DOI: **10.1016/j.apEnergy.2024.124177**.

[J50] Wu, B., Xu, X., Dong, G., Zhang, M., Luo, S., Leung, D. Y. C., and Wang, Y., "Computational modeling studies on microfluidic fuel cell: A prospective review," in: *Renewable & Sustainable Energy Reviews* 191 (Mar. 2024), DOI: **10.1016/j.rser.2023.114082**.

[J51] Lin, M., Yan, C., Wang, W., Dong, G., Meng, J., and Wu, J., "A data-driven approach for estimating state-of-health of lithium-ion batteries considering internal resistance," in: *Energy* 277 (Aug. 2023), DOI: **10.1016/j.Energy.2023.127675**.

[J52] Wang, Y., Pan, W., Leong, K. W., Xu, X., Dong, G., Ye, X., Zhang, M., and Leung, D. Y. C., "Screen-printed water-in-salt Al ion battery for wearable electronics," in: *Journal of Energy Storage* 63 (July 2023), DOI: **10.1016/j.est.2023.106983**.

[J53] Mi, W., Yu, J., Cai, Z., Zhao, F., Dong, G., and Luo, Y., "Investigation on Rotor-Pole Number Cooperation Strategy by Phase Shift in Modular Flux Switching Permanent Magnet Resolvers", in: *49TH ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY (IECON 2023)*, IEEE Industrial Electronics Society, 49th Conference of the Industrial Electronics Society-IECON-Annual, Singapore, SINGAPORE, OCT 16-19, 2023, Institute of Electrical and Electronics Engineers Inc, 2023, DOI: **10.1109/IECON51785.2023.10312510**.

[J54] Wu, J., Fang, L., Dong, G., and Lin, M., "State of health estimation for lithium-ion batteries in real-world electric vehicles," in: *Science China-Technological Sciences* 66.1 (Jan. 2023), pp. 47–56, DOI: **10.1007/s11431-022-2220-y**.

[J55] Zhou, Y., Dong, G., Tan, Q., Han, X., Chen, C., and Wei, J., "State of health estimation for lithium-ion batteries using geometric impedance spectrum features and recurrent Gaussian process regression," in: *Energy* 262.B (Jan. 2023), DOI: **10.1016/j.Energy.2022.125514**.

[J56] Wu, J., Fang, L., Dong, G., and Lin, M., "State of health estimation of lithium-ion battery with improved radial basis function neural network," in: *Energy* 262.B (Jan. 2023), DOI: **10.1016/j.Energy.2022.125380**.

[J57] Wu, J., Fang, L., Meng, J., Lin, M., and Dong, G., "Optimized Multi-Source Fusion Based State of Health Estimation for Lithium-Ion Battery in Fast Charge Applications," in: *IEEE Transactions on Energy Conversion* 37.2 (June 2022), pp. 1489–1498, DOI: **10.1109/TEC.2021.3137423**.

[J58] Wei, Z., Dong, G., Zhang, X., Pou, J., Quan, Z., and He, H., "Noise-Immune Model Identification and State-of-Charge Estimation for Lithium-Ion Battery Using Bilinear Parameterization," in: *IEEE Transactions on Industrial Electronics* 68.1 (Jan. 2021), pp. 312–323, DOI: **10.1109/TIE.2019.2962429**.

[J59] Han, W., Wik, T., Kersten, A., Dong, G., and Zou, C., "Next-Generation Battery Management Systems: Dynamic Reconfiguration," in: *IEEE INDUSTRIAL ELECTRONICS MAGAZINE* 14.4 (Dec. 2020), pp. 20–31, DOI: **10.1109/MIE.2020.3002486**.

[J60] Chen, Z., Xu, K., Wei, J., and Dong, G., "Voltage fault detection for lithium-ion battery pack using local outlier factor," in: *MEASUREMENT* 146 (Nov. 2019), pp. 544–556, DOI: **10.1016/j.measurement.2019.06.052**.

[J61] Wei, Z., Zhao, J., Xiong, R., Dong, G., Pou, J., and Tseng, K. J., "Online Estimation of Power Capacity With Noise Effect Attenuation for Lithium-Ion Battery," in: *IEEE Transactions on Industrial Electronics* 66.7 (July 2019), pp. 5724–5735, DOI: **10.1109/TIE.2018.2878122**.

[J62] Zhang, C., Yu, X., Dong, G., Wei, J., and Chen, Z., "A method for remaining discharge time prediction of lithium-ion batteries under dynamic uncertainty," in: *International Journal of Energy Research* 43.5 (Apr. 2019), pp. 1760–1774, DOI: **10.1002/er.4391**.

[J63] Chen, Z., Sun, H., Dong, G., Wei, J., and Wu, J., "Particle filter-based state-of-charge estimation and remaining-dischargeable-time prediction method for lithium-ion batteries," in: *Journal of Power Sources* 414 (Feb. 2019), pp. 158–166, DOI: **10.1016/j.jpowsour.2019.01.012**.

[J64] Wei, J., Dong, G., and Chen, Z., "Model-based fault diagnosis of Lithium-ion battery using strong tracking Extended Kalman Filter", in: *INNOVATIVE SOLUTIONS FOR Energy TRANSITIONS*, ed. by J Yan, HX Yang, H Li, and X Chen, vol. 158, Energy Procedia, 10th International Conference on Applied Energy (ICAE), Hong Kong, HONG KONG, AUG 22-25, 2018, Appl Energy Innovat Inst; Malardalen Univ, Future Energy Ctr; Elsevier; Solar Energy Soc Hong Kong; CSEE Journal Power & Energy Syst; UNiLAB, 2019, pp. 2500–2505, DOI: **10.1016/j.egypro.2019.01.391**.

[J65] Wei, J., Dong, G., and Chen, Z., "Lyapunov-based state of charge diagnosis and health prognosis for lithium-ion batteries," in: *Journal of Power Sources* 397 (Sept. 2018), pp. 352–360, DOI: **10.1016/j.jpowsour.2018.07.024**.

[J66] Wei, J., Dong, G., and Chen, Z., "On-board adaptive model for state of charge estimation of lithium-ion batteries based on Kalman filter with proportional integral-based error adjustment," in: *Journal of Power Sources* 365 (Oct. 2017), pp. 308–319, DOI: **10.1016/j.jpowsour.2017.08.101**.

[J67] Wei, J., Dong, G., Chen, Z., and Kang, Y., "System state estimation and optimal Energy control framework for multicell lithium-ion battery system," in: *Applied Energy* 187 (Feb. 2017), pp. 37–49, DOI: **10.1016/j.apEnergy.2016.11.057**.

Refereed Conference Proceedings

[C1] Xie, S., Chen, D., and Dong, G., "Robust Lithium-ion Battery SOH Estimation via Denoising Autoencoder-CNN-Transformer with Noisy Multi-Feature Input", in: *Proceedings of 2025 IEEE 26th China Conference on System Simulation Technology and its Applications, CCSSTA 2025*, Shenzhen, China, 2025, pp. 942–947, URL: 10.1109/IEEECONF65522.2025.11137038.

[C2] Feng, Y., Chen, Y., and Dong, G., "Application of A Derivative-Free Data-Driven Optimization Algorithm on Li-Ion Battery Parameter Identification", English, in: *Proceedings of 2025 IEEE 26th China Conference on System Simulation Technology and its Applications, CCSSTA 2025*, Shenzhen, China, 2025, pp. 936–941, URL: 10.1109/IEEECONF65522.2025.11136895.

[C3] Chen, Y., Feng, Y., and Dong, G., "Temperature Estimation of Lithium-Ion Battery Based on Dual Model Fusion", English, in: *Proceedings of 2025 IEEE 26th China Conference on System Simulation Technology and its Applications, CCSSTA 2025*, Shenzhen, China, 2025, pp. 1010–1014, URL: http://dx.doi.org/10.1109/IEEECONF65522.2025.11136995.

[C4] Chen, D., Xie, S., and Dong, G., "Adaptive OCV Hysteresis Modeling for LiFePO4 SOC Estimation via Unscented Kalman Filter", English, in: *Proceedings of 2025 IEEE 26th China Conference on System Simulation Technology and its Applications, CCSSTA 2025*, Shenzhen, China, 2025, pp. 1003–1009, URL: 10.1109/IEEECONF65522.2025.11137268.

[C5] Luo, X., and Dong, G., "Robust Physics-Informed Neural Network for State of Health Estimation of Lithium-Ion Battery", English, in: *Proceedings of 2025 IEEE 26th China Conference on System Simulation Technology and its Applications, CCSSTA 2025*, Shenzhen, China, 2025, pp. 998–1002, URL: 10.1109/IEEECONF65522.2025.11137014.

[C6] Yang, T., Wei, J., Chen, C., and Dong, G., "Charging Scheduling Optimization of Electric Buses Considering Battery Degradation", English, in: *Conference Proceedings - IEEE International Conference on Systems, Man and Cybernetics*, Hybrid, Vienna, Austria, 2025, pp. 3192–3197, URL: 10.1109/SMC58881.2025.11343409.

[C7] Deng, X., Lin, Z., and Dong, G., "Data-Driven Wind Farm Layout Optimization Using Bayesian Adaptive Direct Search", English, in: *Proceedings of 2024 IEEE 25th China Conference on System Simulation Technology and its Application, CCSSTA 2024*, Tianjin, China, 2024, pp. 762–769, URL: 10.1109/CCSSTA62096.2024.10691758.

[C8] Lin, Z., Deng, X., and Dong, G., "Wind Farm Power Optimization Using Bayesian Adaptive Direct Search for Active Pitch Control", English, in: *Proceedings of 2024 IEEE 25th China Conference on System Simulation Technology and its Application, CCSSTA 2024*, Active pitch control;Bayesian;Bayesian optimization;Control strategies;National Renewable Energy Laboratory;Pitch-control;Power Optimization;Wake effect;Wind farm;Wind farm power optimization; Tianjin, China, 2024, pp. 755–761, URL: 10.1109/CCSSTA62096.2024.10691844.

[C9] Cheng, Z., Xue, J., Wang, B., Dong, G., Wei, J., and Chen, C., "Path Planning Using Improved Hybrid A∗ Algorithm for Mobile Robots", English, in: *Proceedings of 2024 IEEE 25th China Conference on System Simulation Technology and its Application, CCSSTA 2024*, Tianjin, China, 2024, pp. 352–357, URL: 10.1109/CCSSTA62096.2024.10691828.

[C10] Sun, L., and Dong, G., "Optimal Power Sharing Control with Stability Enhancement for Islanded Microgrids", English, in: *Proceedings of the 11th International Conference on Innovative Smart Grid Technologies - Asia, ISGT-Asia 2022*, Singapore, Singapore, 2022, pp. 560–564, URL: 10.1109/ISGTAsia54193.2022.10003638.

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Patents

[P1] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., and Lou, Y., "Method and system for lithium battery health diagnosis based on scalable recurrent neural network", ZL202410321108.4 (China), Dec. 2024.

[P2] Dong, G., Wang, Y., Chen, H., Yu, J., Wu, L., Lou, Y., and Zhang, X., "Lithium battery state-of-charge estimation system and method with fast transfer capability", ZL202410321069.8 (China), Jan. 2025.

[P3] Dong, G., Yu, J., Chen, H., Wang, Y., Wu, L., Lou, Y., and Li, M., "Safe and fast charging method for lithium batteries based on distributed robust model predictive control", ZL202410324638.4 (China), Jan. 2025.

[P4] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., and Lou, Y., "Model and data fusion-driven micro-short circuit and low-capacity fault diagnosis and classification method for energy storage lithium batteries for sparse data", ZL202510077144.5 (China), Oct. 2025.

[P5] Dong, G., Chen, H., Wang, Y., Yu, J., and Wu, L., "State-of-health estimation method for lithium-ion batteries under different fast charging conditions", ZL202510022138.X (China), Nov. 2025.

[P6] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., Lou, Y., Li, H., and Zhao, K., "Fault detection method, device, computer equipment and readable storage medium for energy storage equipment sets", ZL202411948997.3 (China), Nov. 2025.

[P7] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., Lou, Y., and Zhang, T., "Fault determination method, device and computer readable storage medium", 2024119925633 (China), Dec. 2024.

[P8] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., Lou, Y., Liu, J., and Wang, S., "Anomaly analysis method, device, computer equipment and storage medium for battery packs", 2025100217045 (China), Jan. 2025.

[P9] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., Lou, Y., Sun, L., and Wei, J., "Fault detection method, device, computer equipment and readable storage medium for energy storage equipment sets", 2024119489973 (China), Dec. 2024.

[P10] Dong, G., Chen, H., Wang, Y., Yu, J., Wu, L., and Lou, Y., "A programmable lithium battery charging and discharging circuit", 2025102226532 (China), Feb. 2025.

Dissertations: as author or Primary Advisor

[D1] Dong, G., "Research on states estimation and optimal control of micro-grid system based on Bayesian method", Ph.D Thesis, Hefei, Anhui: University of Science and Technology of China, 2018.

[D2] Zhu, Z., "Research on robust fast charging control of lithium-ion battery based on the fusion of model predictive control and reinforcement learning", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2025.

[D3] Hua, N., "Battery State of Health Estimation Based on Time and Frequency Domain Features and Deep Transfer Learning", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2025.

[D4] Shen, F., "Research on Fault Diagnosis of Micro-Short Circuit in Power Batteries Driven by Model and Data Fusion", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2025.

[D5] Feng, Y., "Life-long Charging Optimization of Lithium-ion Battery based on A Data-Driven Algorithm", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2026.

[D6] Gao, G., "Research on State Estimation of Lithium Batteries Based on the Integration of Physics Information and Data-Driven Approaches", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2026.

[D7] Chen, Y., "Co-Optimization of Temperature and State of Charge for Lithium-Ion Batteries Based on Model Predictive Control", M.S.E. Thesis, Shenzhen, Guangdong: Harbin Institute of Technology, Shenzhen, 2026.

Research Funding (last updated in April 6, 2026)

Total as Lead PI: ¥11,750,000 CNY

Funding Agency	Performance Period	My Role	Budget	Project Title
National Key R&D Program of China (Task)	Jan 2025 – Dec 2027	Core PI	¥750k	Rapid Capacity Grading, Sorting and Safe Physical Fast-Discharge Method for Retired Batteries

Advanced Motion Control Technology and Modern Automation Equipment Key Laboratory	Mar 2026-Feb 2027	Single PI	¥50k	Development of Rapid Capacity Grading and Sorting Equipment for Retired Batteries
National Key R&D Program of China (Project)	Jan 2025 – Dec 2027	Lead PI	¥2,950k	Collaborative Simulation and Optimization of Flexible Disassembly and Core Removal Technology for Retired Power Batteries
National Natural Science Foundation of China (NSFC)	Jan 2026 – Dec 2028	Single PI	¥500k	Research on Health and Safety Prognosis of Lithium-ion Batteries Based on Multi-task Deep Learning
National Natural Science Foundation of China (NSFC)	Jan 2023 – Dec 2025	Single PI	¥300k	Research on Health Assessment and Life Prediction of Power Batteries for Complex Fast-charging Scenarios
Provincial and Ministerial Level Project	Jan 2024 – Dec 2025	Single PI	¥150k	Optimization and Control Strategy for Health-aware Safe Fast Charging of Power Batteries
Provincial and Ministerial Level Project	Jan 2023 – Dec 2024	Single PI	¥100k	Battery Health Assessment and Life Prediction Driven by Time-domain Response Geometric Feature Data
Industry-sponsored Research Project	Jan 2022 – Dec 2023	Single PI	¥300k	Research on Optimization and Control Strategies of Power Batteries Driven by Digital Twins
Shenzhen Topband Co., Ltd.	Jan 2024 – Dec 2025	Lead PI	¥3,200k	HIT (Shenzhen) - Shenzhen Topband Digital Intelligence Energy Storage Joint Laboratory
Industrial R&D Partnership	Jan 2023 – Dec 2023	Single PI	¥600k	Software Development and Research for 12V Lithium Iron Phosphate Battery SOC Estimation
T-Smart Cloud Platform (Industry)	Jan 2023 – Dec 2023	Single PI	¥600k	Development of Lithium Battery Pack Fault Diagnosis Algorithm for T-Smart Cloud Platform
Shenzhen Peacoak Funding	Jan. 2023-Dec. 2025	Single PI	¥3000k	Opimization and Control of Lithium-ion Based Energy Storage Systems

Teaching (last updated April 6, 2026)

Courses Taught at HIT Shenzhen during Acadamic Year

- Automatic Control Practice B (Auto3002B) | S22, S23, S24, S25, S26
- Frontier Topics in Automation | F22, F23, F24

Student Research Mentoring

Ph.D Students: Graduated

None.

Ph.D Students: Current

1. Dr. Ziheng Li

2. Dr. Haonan Chen
3. Dr. Jian Chen
4. Dr. Songtao Du
5. Dr. Zhenhan Zhang

M.S/Meng. Students

National Scholarship ×5, **Excellent Thesis** ×2

- (AY2025-28) Huiru Li, Zekai Chen, Chaoji Zhu, Wenyu Zhao
- (AY2024-27) *Shaohua Xie*, Daren Chen, *Xiaojia Luo*. ***National Scholoarship*** ×2
- (AY2023-26) ***Yuyao Feng***, *Guangxin Gao*, Yunhao Chen. **All Graduated, *National Scholoarship* ×2, Excellent Thesis** ×1
- (AY2022-25) Fukang Shen, Nanbing Hua, ***Zhipeng Zhu***. All Graduated, *National Scholoarship* ×1, Excellent Thesis ×1

B.S. Students

Total 38, Excellent Thesis ×1

- (AY2025-26) Xin MEI, Guanghai FAN, Yuning YANG, Wenzhe WANG, Zekai CHEN, Haotian SHI Zishi ZHANG, Donghui LAN
- (AY2024-25) Yuzhi ZHANG, Ying GUO, Chaoji ZHU, Xuhao DENG, Zekai LIN, Haoyu GONG Haoyu GONG, Fan LIN, Hao CHEN
- (AY2023-24) Shaohua XIE, Yimeng HAO, Daren CHEN, Xiaochao ZHOU, Jiu XIONG, Jian CHEN, Yanrui XU, Junyu CHEN, Lei XU, Haowen ZHANG, Yiming WANG
- (AY2022-23) Guangyuan MA, Yuyao FENG Jing LIANG, Guangxin GAO, Shaopeng ZHANG, Yupeng LI, Haonan CHEN, Tingting ZHENG
- (AY2021-22) Yuan YUAN, Qingye TIAN

Societny Membership

Institute of Electrical and Electronics Engineering (IEEE)

Technical Committee on Industrial Informatics, IES (2025-Now)
Member, Industrial Electronics Society (2018–Present)
Student Member, Industrial Electronics Society (2015–2017)

Chinese Association of Automation (CAA)

Technical Committee on System Simulation, 2020–Present
Life Member, (2022–Present)

Conference Committee Service

- Program Committee, 2023 2nd International Conference on Machine Learning, Control, and Robotics (MLCR), Nanjing China
- Local Organizing Committee Chair, 2025 IEEE 26th China Conference on System Simulation Technology and its Applications (CCSSTA), Shenzhen China

Invited/Special/Tutorial Sessions Organized at Conferences

- "Energy Storage Technologies" (Invited IEEE I&CPS Asia 2023), Track Chair, Chongqing China
- "Advanced Battery Management and Control in Autonomous Mobile Robots" (Invited IEEE ICARM 2020), Session Chair, Shenzhen China

Academic Service

Editorial Boards

- **Associate Editor**, *Electronics* (SCI Journal) 2024.09 – Present
- **Guest Editor**, *Electronics*, Special Issue on "Advances in Battery Management Storage for Electric Vehicles: When Models Meet Data" 2024.09
- **Guest Editor**, *Frontiers in Energy Research*, Special Issue on "Hybrid Energy Storage Systems: Materials, Devices, Modeling, and Applications" 2022.08
- **Early Career Editorial Board Member**, *Advances in New and Renewable Energy* (CSCD) 2023.10 – Present

SISE School

- Committee on Undergraduate Dissertations
- Recruitment Committee of Henan Province: Data Analysis Administrator

HIT Shenzhen Campus

Nono.

Reviewer

- **Funding Agencies:** None
- **Publisher:** Springer
- **Journals:**
  - **Power& Energy:** IEEE Trans. Industial Electronics, IEEE Trans. Power Electronics, IEEE Transactions on Energy Conversion, Journal of Energy Storage
  - **Systems &Control:** IEEE Trans. Industrial Informtics, IEEE Trans. Instrument and Measurement
  - **Transportation:** IEEE Transactions on Transportation Electrification, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Vehicular Technology,
  - **Broad&Interdisciplinary:** Nature Communication

Invited Talks

- **Keynote Speaker**, International Conference on Artificial Intelligence Applications and Technologies (AIAAT) 2026.07
- **Invited Speaker**, The 11th Forum on Advanced Electrical Engineering (FAFEE 2024), organized by China Electrotechnical Society 2024.06
- **Invited Speaker**, The 17th Annual Meeting of China Electrotechnical Society 2022.09