

EDUCATION

- Xi'an Jiaotong University

Master of Engineering in Electrical Engineering; GPA: 3.7/4.0, top 2%

Xi'an, China

Fall 2016 – Summer 2019
- Northwestern Polytechnical University

Bachelor of Engineering in Electrical Engineering and Automation; GPA: 85.6/100

Xi'an, China

Fall 2012 – Summer 2016

PROJECTS

- Finance-induced Hybrid Machine Learning Algorithms for Commercialization

Course: Machine Learning for Trading, Online

Fall 2021 – Present

◦ Employing reinforcement-based learner (Q-learner) to achieve profitable trading through a series of trading simulations and offer optimized transaction strategy;

◦ Analyzing a combination of attributes in addition to technical indicators that can be used for machine learning-based predictors.
- Data-Driven Machine Learning Tech in Smart Grid Systems

State Grid Corporation of China, Suzhou, China

Fall 2019 – Present

◦ Designing hourly short-term load forecast (STLF) and Feed-Forward Artificial Neural Network (FF-ANN) to predict the power grid load at the distribution transformer's level;

◦ Utilizing multi-processing to optimize the model and get it integrated to the dispatch operation system;

◦ Employing Recurrent Neural Network (RNN) and fuzzy logic to execute transient event classification and detection;

◦ Exploiting data mining algorithm Decision Tree (DT) with a Random Forest (RF) based black box model to detect and classify faults in micro-grids.
- Computational Algorithm Design of Carrier Transport and Energy Transfer in Dielectrics

National High-tech RD Program (863Program) of China, Beijing, China

Fall 2016 – Spring 2019

◦ Proposed the carrier transport and molecular displacement (CTMD) model based on First-Principles to depict the microscopic behavior of electrons and explain the dielectric property of insulating devices;

◦ Combined with genetic algorithm assisted model to offer flexible models for different device systems and provides a new perspective to demonstrate their physical and chemical properties.
- Physical Theory of High Electric Field Resistance Device

National Natural Science Foundation (NSF) of China, Shanghai, China

Fall 2016 – Fall 2018

◦ Proposed current and energy flux model and computational calculation based on First-Order trap dynamics model and Finite Element Analysis (FEA), with a focus on the energy transfer resulting from the carrier motion;

◦ Built the multi-dimension architecture to depict the dynamic deterioration process in the dielectric material, with a concentration on setting up a continuous model derived from the discrete one.
- Path Optimization Method of Vehicles based on Genetic Algorithm

College Students' Innovative Entrepreneurial Training Plan Program, Xi'an, China

Summer 2014 – Spring 2016

◦ Optimization design and numerical algorithm of path optimization based on Dijkstra's algorithm for vehicles in transportation under different conditions;

◦ Investigate the leading control of vehicles using predictive control with real-time optimization

SELECTED PUBLICATIONS

[1] D. Min, **C. Yan**, R. Mi, Y. Huang, et al., "Carrier Transport and Molecular Displacement Modulated dc Electrical Breakdown of Polypropylene Nanocomposites," in *Polymers*, vol. 10, no. 11, pp. 1194-1207, Oct. 2018.DOI: 10.3390/polym10111207

[2] D. Min, **C. Yan**, Y. Huang, S. Li, et al., "Dielectric and Carrier Transport Properties of Silicone Rubber Degraded byGamma Irradiation," in *Polymers*, vol. 9, no. 10, pp. 1634-1646, Oct. 2017. DOI: 10.3390/polym9100533

[3] D. Min, **C. Yan**, R. Mi, H. Cui, et al., "Space-Charge Modulated Electrical Breakdown in Polyethylene Nanodielectrics:Its Relation to Deep Traps in Interaction Zones," in *IEEE Nanotechnology Magazine*, vol. 12, no. 2, pp. 15-22, Oct. 2018. DOI:10.1109/MNANO.2018.2814088

[4] D. Min, Y. Li, **C. Yan**, D. Xie, S. Li, et al., "Thickness-Dependent DC Electrical Breakdown of Polyimide Modulated by Charge Transport and Molecular Displacement," in *Polymers*, vol. 10, no. 9, pp. 1008-1021, Oct. 2018. DOI: <https://www.mdpi.com/2073-4360/10/9/101210.3390/polym10091012>

[5] C. Cheng, X. Chi, **C. Yan**, D. Xie, et al., "Polypropylene Nanocomposite for Power Equipment: A Review," in *The Institution of Engineering and Technology Nanodielectric*, vol. 1, no. 2, pp. 92-103, Oct. 2018. DOI: 10.1049/iet-nde.2018.0005

D. Min is my supervisor in graduate study, we have equal contribution to the work

CONFERENCES AND PRESENTATIONS

[1] D. Min, **C. Yan**, W. Wang, et al., "Electrical breakdown of polymer nanocomposites modulated by space charges," *2017 IEEE 17th International Conference on Nanotechnology*, pp. 267-269, IEEE, Pittsburgh, PA, USA, Nov. 2017. DOI:10.1109/NANO.2017.8117403 (**Oral Presentation**)

[2] Y. Li, **C. Yan**, D. Min, et al., "Numerical simulation on DC breakdown of polyimide based on charge transport and molecular chain displacement," *21th International Symposium on High Voltage Engineering 2019*, pp. 108-117, Springer, Buenos Aires, Argentina, Nov. 2019. DOI: 10.1007/978-3-030-31676-1_11

[3] R. Mi, **C. Yan**, Z. Xing, et al., "Effect of deep traps and molecular motion on dc breakdown of polyethylene nanocomposites," *21th International Symposium on High Voltage Engineering 2019*, pp. 1087-1096, Springer, Buenos Aires, Argentina, Nov. 2019. DOI: 10.1007/978-3-030-31676-1_102

[4] D. Xie, **C. Yan**, Y. Huang, et al., "Study on short-term DC breakdown and coronra resistance mechanism of polyimide," *2017 International Symposium on Electrical Insulating Material*, pp. 437-441, IEEE, Toyohashi, Japan, Nov. 2017 DOI:ISEIM.2017.8088778 (**Oral Presentation**)

[5] S. Li, W. Yan, **C. Yan**, et al., "Surface trap and carrier transport of aged and pristine oil-paper under harmonic voltage by surface potential decay," pp. 108-117, Springer, Buenos Aires, Argentina, Nov. 2019. DOI: 10.1109/CEIDP.2017.8257540 (**Poster**)

FELLOWSHIPS, HONORS, AND AWARDS

2019	Graduate with Honor(top 1%)	Xi'an Jiaotong University
2018	National Scholarship(top 2%)	Ministry of Education of the People's Republic of China
	National Special Scholarship(top 1%)	State Key Laboratory of Electrical Insulation
	First-class Scholarship	Xi'an Jiaotong University
	Excellent Postgraduate	Xi'an Jiaotong University
2017	National Scholarship(top 2%)	Ministry of Education of the People's Republic of China
	National MCM for the graduate, Honorable Mention	China Society for Industrial and Applied Mathematics
	First-class Scholarship	Xi'an Jiaotong University
	Excellent Postgraduate	Xi'an Jiaotong University
2016	Scholarship for Outstanding Freshman	Xi'an Jiaotong University
	Outstanding undergraduate student	Northwestern Polytechnical University
2015	Provincial Special Scholarship(top 5%)	Education Department of Shaanxi Provincial Government
	First-class Scholarship	Northwestern Polytechnical University
	International MCM, Honorable Mention	Consortium for Mathematics and Its Application
	5th Mathorcup International MCM, Outstanding Award	China Society for Industrial and Applied Mathematics
	Undergraduate with Honor	Award Northwestern Polytechnical University
	National Scholarship(top 2%)	Ministry of Education of the People's Republic of China
2014	First-class Scholarship	Northwestern Polytechnical University
	Endress + Hauser SC China Scholarship(top 2%)	Education Department of Shaanxi Provincial Government
	National MCM, Outstanding award	Ministry of Education of the People's Republic of China
	National College Debate Contest, Best Debater	Debate Association of China
	Excellent Undergraduate Student Award	Northwestern Polytechnical University
2013	First-class Scholarship	Northwestern Polytechnical University
	Excellent Undergraduate Student Award	Northwestern Polytechnical University

TEACHING EXPERIENCE

- **Cofounder of WELAND International Education & Consutlting Corporation**
Beijing, China Spring 2013 – Fall 2017
 - Communicate with prestigious foreign universities to together Organize international competitions for middle school students;
 - Develop educational products as well as their lesson manuscripts to satisfy the needs of markets;
 - Cooperate with some members of the United Nations Committee, like HRC,ECOSOC, to design international volunteer activities for students.
- **Numerical Calculation of energy flux in the polypropylene film of power capacitor**
Guider for an undergraduate thesis, Xi'an, China Fall 2018 – Summer 2019
 - Proposed research scheme on determining the research scope and methods;
 - Led the student to the modeling and calculation with the simulation of Fluent, carrying out related experiments, data analysis, and thesis revising.

PROGRAMMING SKILLS

- **Simulation:** Simulink, PSCAD, Fluent, 3D Max
- **Programming:** Python(scikit-learn, PyTorch, Numpy, Pandas), C/C#, Javascript, Scala, MATLAB, HTML, Java