

师资队伍

首页 ([../index.htm](#)) > 师资队伍 ([../szdw/lyys/wdz.htm](#)) > 副高职称 ([../szdw/fgzc.htm](#)) > 核能科学与工程 ([../szdw/fgzc/hnkxygc.htm](#)) > 副教授 ([../szdw/fgzc/hnkxygc/fjs.htm](#)) > 正文

两院院士 ([../szdw/lyys/wdz.htm](#)) 杰出人才 ([../szdw/jcrc.htm](#))

正高职称 ([../szdw/zgzc.htm](#)) 副高职称 ([../szdw/fgzc.htm](#))

中级职称 ([../szdw/zjzc.htm](#))



董哲

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职务: 博士生导师

教育背景

博士 200701 清华大学 导航、制导与控制
学士 200207 清华大学 机械设计制造及自动化

工作履历

200705 – 今 清华大学 核研院 助研/副研/副教授/长聘副教授/研究室副主任

学术兼职

研究领域

核电厂控制与运行技术、先进控制理论与工程应用、统计信号估计与检测

研究概况

- 201801 - 202012 多模块高温气冷堆核电站的控制和运行技术研究 国家科技重大专项
201801 - 202112 多模块核能系统的自愈控制方法研究 国家自然科学基金/面上
201401 - 201712 多模块高温气冷堆核能系统的协调控制方法研究 国家自然科学基金/面上
201101 - 201312 球床式高温气冷堆核能系统的非线性鲁棒功率控制方法研究 国家自然科学基金/青年
200801 - 201912 高温气冷堆数字化控制保护系统关键技术研究 国家科技 重大专项

学术成果

以第一作者发表SCI期刊论文50篇，登记软件著作权11项，代表性论文如下：

Dong Z*, Huang X, Dong Y, Zhang Z. Multilayer perception based reinforcement learning supervisory control of energy systems with application to a nuclear steam supply system. *Applied Energy*, 2020, 259: 114193.

Dong Z*, Liu M, Zhang Z, Dong Y, Huang X. Automatic generation control for the flexible operation of multimodular high temperature gas-cooled reactor plants. *Renewable & Sustainable Energy Reviews*, 2019, 108: 11-31.

Dong Z*, Liu M, Huang X, Zhang Y, Zhang Z, Dong Y. Dynamical modeling and simulation analysis of a nuclear desalination plant based on the MED-TVC process. *Desalination*, 2019, 456: 121-135.

Dong Z*, Liu M, Guo Z, Huang X, Zhang Y, Zhang Z. Adaptive state-observer for monitoring flexible nuclear reactors. *Energy*, 2019, 171: 893-909.

Dong Z*, Zhang Z, Dong Y, Huang X. Multi-layer perception based model predictive control for the thermal power of nuclear superheated-steam supply systems. *Energy*, 2018., 151: 116-125

Dong Z*, Pan Y, Zhang Z, Dong Y, Huang X. Dynamical modeling and simulation of the six-modular high temperature gas-cooled reactor plant HTR-PM600. *Energy*, 2018, 155: 971-991.

Dong Z*, Zhang Z, Dong Y, Huang X. Multi-layer perception based model predictive control for the thermal power of nuclear superheated-steam supply systems. *Energy*, 2018, 151: 116-125.

Dong Z*, Pan Y, Huang X, Dong Y, Zhang Z. Coordinated control system design and verification of HTR-PM Plant. *Nuclear Engineering and Design*, 2018, 329: 25-33.

Dong Z*, Pan Y, Huang X. Parameter identifiability of Boolean networks with application to fault diagnosis of nuclear plants. *Nuclear Engineering and Technology*, 50: 599-605, 2018.

- Dong Z*, Pan Y, Zhang Z, Dong Y, Huang X. Model-free adaptive control law for nuclear superheated-steam supply systems. *Energy*, 2017, 135: 53-67.
- Dong Z*, Song M, Huang X, Zhang Z, Wu Z. Coordination control of SMR-based NSSS modules integrated by feedwater distribution. *IEEE Transactions on Nuclear Science*, 2016., 63: 2691-2697
- Dong Z*, Huang X, Li D, Zhang Z. Reactivity estimation based on an extended state observer of neutron kinetics. *IEEE Transactions on Nuclear Science*, 2016, 63: 2682-2690.
- Dong Z*, Song M, Huang X, Zhang Z, Wu Z. Module coordination control of MHTGR-based multi-modular nuclear plants. *IEEE Transactions on Nuclear Science*, 2016, 63: 1889-1900.
- Dong Z*. Model-free power-level control of MHTGRs against input saturation and dead-zone. *IEEE Transactions on Nuclear Science*, 62(6): 3297-3310, 2015.
- Dong Z*, You Z. Finite-horizon robust Kalman filtering for uncertain discrete time-varying systems with uncertain-covariance white noises. *IEEE Signal Processing Letters*, 2006, 13: 493-496