

## **Exploration of Fuel Cell Cogeneration Technology Application in High Proportion Renewable Energy Distribution Systems**

**Abstract:**

High proportion renewable energy distribution systems face challenges. There are typical scenarios for the development of electricity hydrogen integration. Moreover, integration of distributed hydrogen fuel cell cogeneration system, grid connection technology, multi machine collaborative flexible control technology, and active support technology will be introduced.

题目：燃料电池热电联供技术在高比例可再生能源配用电系统中的应用探索

摘要：高比例可再生能源配用电系统面临安全、可靠、消纳等挑战。报告讲述了电氢融合综合能源发展典型场景，探索了分布式氢燃料电池热电联产系统集成、并网、柔性控制和主动支撑等技术应用。



He Guixiong, male, with a PhD in engineering, is a professor level senior engineer, an international energy efficiency evaluator, and the head of the "Integrated Energy System Simulation and Optimization Technology" team at the China Electric Power Research Institute. His main research direction is new technologies for integrated energy and electric hydrogen integration. In the past five years, as the project leader/research subject leader, he has undertaken more than 30 science and technology projects funded by the National Natural Science Foundation of China, the National Key R&D Program, and State Grid Corporation of China. He has published 22 papers, authorized 16 invention patents, led the drafting of 14 standards, authored 5 monographs, and won 12 provincial and ministerial level scientific and technological progress awards, 1 first prize for Chinese standard innovation, and 1 excellent patent award from State Grid Corporation of China.

何桂雄，男，工学博士，中国电科院用能所主任工程师，教授级高级工程师，国际能效测评师，中国电机工程学会分布式发电与配电委员会综合能源学组副组长，中国电科院“综合能源系统仿真与优化技术”团队负责人，主要研究方向为综合能源、电氢融合新技术。近五年作为项目负责人/课题负责人承担国家自然科学基金、国家重点研发计划、国网公司科技项目 28 项。发表中文核心、EI/SCI 论文 22 篇，授权发明专利 16 项，主持起草标准 14 项，编写专著 5 部，获省部级科技进步奖 12 项（一等奖 2 项），中国标准创新一等奖 1 项，国网公司优秀专利奖 1 项。