International Postdoctoral Position Descriptions

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No.	Discipline(s)	Postdoctoral Research Position(s)	Primary Research Focus	Number of Positions & Duration	About the Principal Investigator (PI) and Research Team	Required Qualifications & Eligibility Criteria	Benefits and Support	Application Procedures
1	Primary Discipline：Power Engineering and Engineering Thermophysics; Secondary Disciplines: Engineering Thermophysics / Thermal Energy Engineering / Fluid Machinery and Engineering	Thermal Management Equipment R&D for Solid Oxide Electrolysis Cells (SOEC	1. Research Directions: High-temperature thermal management of SOEC and its systems; design and optimization of key thermal system components, such as heat exchangers, reformers, and combustion chambers; multi-physics (thermal-fluid-electrical-chemical) coupled simulation and thermal stress analysis. 2. Core Content: Conducting research on temperature	Availability: 1-2 positions for a period of 1 to 3 years, contingent upon the progress of the research project.	Co-supervisor：Xiao Guoping, senior research engineer, director of the Hydrogen Energy Technology Department at the Shanghai Institute of Applied Physics, CAS. Member of the Shanghai Oriental Talent Program.	1. Age & Degree: Candidates should generally be under 35 years old and must have obtained or be about to obtain a Ph.D. degree. 2. Educational Background: A background in relevant disciplines such as Engineering Thermophysics, Power Engineering and Engineering	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who

	/ Chemical Process Equipment	)	field uniformity and flow field distribution around the SOEC stack, and designing and optimizing the thermal management system; developing high-efficiency preheating heat exchangers, combustion chambers, and other thermal integration components for SOEC systems; exploring thermal control strategies during system startup and steady-state operation, and developing thermal management control algorithms; building test platforms for key thermal management components and systems, and conducting experimental verification and model refinement.		Member of the Youth Innovation Promotion Association of CAS. Engaging in the research and application of solid oxide electrolysis and hydrogen production technology. Leading the development of 200 kW high-temperature SOEC project and the 100 kW r-SOEC project. Both programs have been selected as prior highlight programs in the national energy sector.	Thermophysics, Fluid Machinery, Chemical Process Machinery, or New Energy Science and Engineering is required. 3. Research Skills: Solid theoretical foundation in heat transfer, fluid mechanics, and thermodynamics. Proficiency in at least one thermal-fluid simulation software (e.g., COMSOL, ANSYS Fluent, OpenFOAM). Preference will be given to candidates with experience in high-temperature experimental setup, thermal performance testing, or thermal management system	will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	pass the interview assessment will be submitted to the director meeting for final review and approval.

					Our team deeply focuses on the research of Solid Oxide Electrolysis Cells (SOECs). The research team possessed professional science platforms, direct support from national fundings, and great research diversity.	design. 4. Academic Achievements: At least one first-author research paper published in a mainstream SCI-indexed journal in the fields of energy, thermal science, or chemical engineering. 5. Language & Competencies: Strong English proficiency in listening, speaking, reading, and writing, with the ability to independently write English academic papers. Diligent, rigorous, team-oriented, and capable of conducting independent scientific research. 6. Compliance: Must comply with Chinese		

						laws and regulations as well as institutional rules and policies.		
2	Primary Discipline：Control Science and Engineering; Instrument Science and Technology; Mechanical Engineering; Power Engineering and Engineering Thermophysics; Electrical Engineering and other related majors.	SOEC System Modeling and Control	Research Directions: Multiscale and multiphysics coupling modeling of SOEC modules and systems; research on multi-stack and system integration and operation control strategies; analysis of system degradation mechanisms and life prediction models. Core Responsibilities: 1. Responsible for SOEC system modeling and process flow optimization design; 2. Responsible for SOEC system control strategy research and assisting in the development of system	Availability: 1-2 positions for a period of 1 to 3 years, contingent upon the progress of the research project.	Co-supervisor:Suping Peng, academician of the Chinese Academy of Engineering. Professor at China University of Mining & Technology, Beijing (CUMTB). Director of the State Key Laboratory of Fine Exploration and Intelligent Development of Coal Sources, Engaging and promoting	1. Professional Qualities: Exhibits strong research capability and a high degree of professionalism. Works effectively in a team environment with a collaborative attitude. 2. Age and Degree: In good health and generally under 35 years of age. Holds a Ph.D. degree, preferably obtained within the past three years. Age or graduation period requirements may be flexibly adjusted for fields with urgent talent demands. 3. Theoretical and	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided.	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for final review and

			control software; 3. Responsible for SOEC system operation mechanism analysis and life prediction research; 4. Responsible for the design, development, and control debugging of auxiliary subsystems.		technology research and achievement transformation related to solid oxide electrolytic cells and fuel cells. Our team deeply focuses on the research of Solid Oxide Electrolysis Cells (SOECs). The research team possessed professional science platforms, direct support from national fundings, and great research diversity.	Technical Competence: Proficient in theoretical foundations including energy system modeling and simulation, control theory, and thermal engineering principles. Skilled in testing and analytical methods for parameters such as temperature, pressure, and flow rate. Familiar with instrumentation data acquisition, control systems, and communication protocols. 4. Software Proficiency: Experienced in using software such as MATLAB, Python, and Aspen Plus for system modeling and control strategy development. 5. Preferred Experience:	5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	approval.

						Preference will be given to candidates with more than three years of research and development experience in SOEC or fuel cell system modeling and control theory. 6.Compliance: Must comply with Chinese laws and regulations as well as institutional rules and policies.		
3	Primary Discipline：Mechanical Engineering, Instrument Science and Technology, Power Engineering and Engineering Thermophysics, Electrical	SOEC Stack Testing and Fault Diagnosis	Research Directions: Development of in-situ/operating condition testing techniques for electrolytic stacks; Non-destructive fault detection and health status assessment techniques for entire SOEC stacks; Establishment of a complete closed-loop system of "detection and	Availability: 1-2 positions for a period of 1 to 3 years, contingent upon the progress of the research project.	Co-supervisor:Suping Peng, academician of the Chinese Academy of Engineering. Professor at China University of Mining & Technology, Beijing	1. Professional Qualities: Exhibits strong research capability and a high degree of professionalism. Works effectively in a team environment with a collaborative attitude. 2. Age and Degree: In good health and generally under 35	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years.	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification

	Engineering, Chemical Engineering and Technology, and other related majors.		diagnosis - mechanism modeling - predictive control - experimental verification". Core Content: 1. Responsible for the development and optimization of SOEC electrolytic stack testing devices, formulating testing schemes under in-situ/operating conditions, and conducting relevant tests; 2. Responsible for the development of high-temperature in-situ testing techniques and sensors for SOEC; 3. Responsible for processing test data, compiling test reports, and conducting fault diagnosis and analysis; 4. Establishing a fault		(CUMTB). Director of the State Key Laboratory of Fine Exploration and Intelligent Development of Coal Sources, Engaging and promoting technology research and achievement transformation related to solid oxide electrolytic cells and fuel cells. Our team deeply focuses on the research of Solid Oxide Electrolysis Cells (SOECs). The research team possessed professional	years of age. Holds a Ph.D. degree, preferably obtained within the past three years. Age or graduation period requirements may be flexibly adjusted for fields with urgent talent demands. 3. Technical and Analytical Proficiency: Proficient in testing and analysis methods such as electrochemical impedance, temperature, pressure, and flow rate measurement. Skilled in data acquisition using LabVIEW. Familiar with instrumentation communication protocols and equipment interfacing. 4. Data Analysis and Methodological	3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for final review and approval.

			feedback mechanism to realize a complete process analysis and testing system of "detection and diagnosis - mechanism modeling - predictive control - experimental verification".		science platforms, direct support from national fundings, and great research diversity.	Competence: Experienced in data analysis using software such as MATLAB and Python. Knowledgeable in theoretical and methodological approaches related to fault diagnosis and lifespan prediction. 5. Preferred Qualifications: Preference will be given to candidates with over 3 years of research and development experience in fuel cell testing and fault diagnosis. 6. Compliance: Must comply with Chinese laws and regulations as well as institutional rules and policies.		
4	Primary	SOEC Key	Research Directions: Innovation, optimization,	Availability: 1-2	Co-supervisor:Zhibin	1. Professional Qualities: Exhibits	1.Annual salary starts at 350,000	The applicant shall first

	Discipline：Materials Science and Engineering; Chemical Engineering and Technology and other related majors.	Materials Design and R&D	and mechanistic studies of key materials for SOEC (Solid Oxide Electrolyzer Cell); large-scale consistent preparation techniques for powders; application-oriented empirical research of electrolyzer cells. Core Content: 1. Responsible for the design, preparation, characterization, and optimization of key materials for SOEC. 2. Analyzing the "composition-structure-performance-stability" relationship, designing and implementing improvement schemes, studying degradation mechanisms, and developing a new generation of high-performance, long-life, and	positions for a period of 1 to 3 years, contingent upon the progress of the research project.	Yang, Professor of China University of Mining & Technology, Beijing (CUMTB), PhD supervisor. Council member of the Chinese Ceramic Society. Deputy secretary of the Fuel Cell and Hydrogen Energy Committees of the China Energy Research Society. Holding multiple national research projects, NSF grants, and key programs in cooperation with central enterprises.	strong research capability and a high degree of professionalism. Works effectively in a team environment with a collaborative attitude. 2. Age and Degree: In good health and generally under 35 years of age. Holds a Ph.D. degree, preferably obtained within the past three years. Age or graduation period requirements may be flexibly adjusted for fields with urgent talent demands. 3. Materials Characterization and Integrated Methodology: Proficient in a wide range of material property	RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements,	communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for final review and approval.

			low-cost material systems; 3. Responsible for the high-consistency large-scale preparation of materials, testing new materials and structures at the single-cell level, and verifying their comprehensive performance under near-realistic complex operating conditions; 4. Analysis of performance degradation mechanisms and lifetime prediction of key materials.		Mainly focus on hydrogen technologies and solid oxide electrolysis/fuel cells. Our team deeply focuses on the research of Solid Oxide Electrolysis Cells (SOECs). We possessed professional science platforms, direct support from national fundings, and great research diversity.	characterization techniques. Capable of integrating computational materials science with experimental approaches to drive material design and optimization. 4. Process Mastery in SOFC/SOEC Fabrication: Skilled in preparation techniques for SOFC/SOEC-related materials, electrodes, electrolytes, and cell assembly. 5. Preferred Research Experience: Preference will be given to candidates with over 4 years of research experience in SOFC or SOEC-related materials 6. Compliance: Must	and children's education services.	

						comply with Chinese laws and regulations as well as institutional rules and policies..		
5	First-level Discipline: Electrical Engineering Second-level Discipline: Power Electronics and Electric Drives, Power Systems and Their Automation	Development of Detailed Models for Typical Equipment in New-Type Power Systems	1. Research directions: Modeling of new-type converter equipment and new energy power stations; 2. Key content: In response to the analytical requirements of future new-type power systems, research will focus on developing detailed models of novel converter equipment considering distributed parameters and non-ideal switching device transient behaviors, as well as investigating reduced-order equivalent modeling theories for clusters of new energy power generation units and their control systems.	1 person 2-3 years	Co-advisor: Pang Hui, male, PhD, Senior Engineer and doctoral supervisor, national leading talent in scientific and technological innovation. His research focuses on high-voltage, high-capacity power electronic equipment, electromagnetic transient simulation software, and system studies. He has won one Second-Class	1. Age generally not exceeding 35 years old; 2. Capable of establishing electromagnetic transient models for common power electronic equipment; 3. Proficient in electromagnetic transient simulation software such as PSCAD, with foundational programming skills in C/C++; 4. Experience in simulation and analysis related to grid connection control of new energy units and power stations; 5.	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for

					National Technological Invention Award and five provincial and ministerial-level awards. Research Team: The Power Electronics Simulation Research Group, affiliated with the Institute of Power Systems, serves major national strategies for power system transformation and the construction of new power systems. It undertakes key national research projects, conducts	Comply with Chinese laws, regulations, and the unit's rules and regulations	provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	final review and approval.

					forward-looking research on simulation core technologies, and develops, applies, and promotes high-performance simulation software and hardware systems.			
6	First-level Discipline: Electrical Engineering Second-level Discipline: Power Electronics and Electric Drives, Power Systems and Their Automation	Research on Nonlinear Solving Acceleration Methods	1. Research directions: Theory and techniques for solving large-scale time-varying, nonlinear circuits; 2. Core content: Research on equivalent modeling methods for different types of nonlinear components, efficient and stable numerical solution methods for nonlinear circuits, and their computer implementation techniques, targeting complex power electronic	1 person 2-3 years	Co-advisor: Pang Hui, male, PhD, Senior Engineer and doctoral supervisor, national leading talent in scientific and technological innovation. His research focuses on high-voltage, high-capacity power electronic equipment, electromagnetic	1. Age generally not exceeding 35 years old; 2. Familiar with theoretical foundations of numerical algorithms, and understand the basic principles of electromagnetic transient simulation; 3. Possess a solid foundation in mathematical theory, proficient in C/C++ programming	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided.	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who

			equipment and power electronic-based power systems.		transient simulation software, and system studies. He has won one Second-Class National Technological Invention Award and five provincial and ministerial-level awards. Research Team: The Power Electronics Simulation Research Group, affiliated with the Institute of Power Systems, serves major national strategies for power system transformation and the	development, and familiar with advanced algorithm research languages such as MATLAB and Python; 4. Experienced in numerical computation of large-scale ordinary differential equations, differential-algebraic equations, and nonlinear systems; 5. Comply with Chinese laws, regulations, and the unit's rules and regulations.	4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	pass the interview assessment will be submitted to the director meeting for final review and approval.

					construction of new power systems. It undertakes key national research projects, conducts forward-looking research on simulation core technologies, and develops, applies, and promotes high-performance simulation software and hardware systems.			
7	First-level Discipline: Electrical Engineering Second-level Discipline: Power Electronics and Electric Drives,	Real-time simulation modeling and computation engine	1. Research direction: Real-time electromagnetic transient simulation solving algorithms and model development; 2. Core content: Investigate real-time simulation acceleration solving methods and	1 person 2-3 years	Co-advisor: Pang Hui, male, PhD, Senior Engineer and doctoral supervisor, national leading talent in scientific and technological innovation. His	1. Age generally not exceeding 35 years old; 2. Familiar with the theoretical framework of electromagnetic transient simulation algorithms, high-performance computing technologies, Linux	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the

	Power Systems and Their Automation	develop ment	complex equipment optimization modeling methods compatible with two types of hardware platforms—CPU and FPGA.		research focuses on high-voltage, high-capacity power electronic equipment, electromagnetic transient simulation software, and system studies. He has won one Second-Class National Technological Invention Award and five provincial and ministerial-level awards. Research Team: The Power Electronics Simulation Research Group, affiliated with the Institute of Power	development environment, and real-time simulation/hardware-in-the-loop simulation techniques; 3. Possesses a solid foundation in mathematical theory, proficient C/C++ programming skills, and knowledge of power electronics; 4. Complies with Chinese laws, regulations, and the unit's rules and regulations.	for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for final review and approval.

					Systems, serves major national strategies for power system transformation and the construction of new power systems. It undertakes key national research projects, conducts forward-looking research on simulation core technologies, and develops, applies, and promotes high-performance simulation software and hardware systems.			
8	Control Science and Engineering / Control Theory	Research Positio	**Research Directions:** Intelligent control technologies for renewable	Number of Positions: 2	**Co-supervisor：** Prof. Hua Geng is a Tenured	Applicants should generally be under 35 years of age.	1.Annual salary starts at 350,000 RMB per year.	The applicant shall first communicate

	and Control Engineering Control Science and Engineering / Systems Engineering Electrical Engineering / Power Systems and Automation Reliability Theory and Technology	n in Intelligent Control Technologies for Renewable Energy Systems	energy systems, including wind and hydropower; Reliability assessment and enhancement techniques for renewable energy systems. **Core Research Topics:** Multi-scale modeling and digital twin technologies for renewable energy systems; AI-based intelligent coordinated control strategies for renewable energy systems; Belief reliability-based modeling and assessment methods for system reliability in renewable energy systems.	Duration: 2 years	Professor and Doctoral Supervisor at Tsinghua University, an IEEE Fellow, AAIA Fellow, and IET Fellow. He is a Changjiang Scholar Distinguished Professor appointed by the Ministry of Education and a Chief Scientist of the National Key R&D Program of China. His research focuses on intelligent control and optimization of renewable energy systems. Prof.	Hold a relevant academic background in wind power, hydropower, system reliability, or closely related fields. Have published at least one first-author paper in an SCI-indexed journal on relevant topics. Possess strong English proficiency in listening, speaking, reading, and writing, and demonstrate the ability to conduct independent research. Comply with Chinese laws, regulations, and institutional policies.	2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's	with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will be submitted to the director meeting for final review and approval.

					Geng serves as Editor-in-Chief of IEEE Transactions on Sustainable Energy, an IEEE IAS Distinguished Lecturer, and Convener of an IEC SC8A Working Group. Dr. Jie Liu is an Associate Professor at Beihang University. His research interests include belief reliability, trustworthy fault diagnosis, and remaining useful life prediction. He has received a First Prize in		education services.	

					Provincial/MOE-level Science and Technology Progress Award and a Second Prize in Natural Science from the Chinese Society of Aeronautics and Astronautics. Dr. Liu is listed among the Stanford–Elsevier Top 2% Scientists (Career-long Impact) and recognized as a Xiaomi Young Scholar. **Team：** Our interdisciplinary team integrates expertise from Control Science and Engineering,			

					Mechanical Engineering, Electrical Engineering, and Hydraulic & Hydropower Engineering. We focus on modeling and control of hydro/wind power plants as well as the theory of assured reliability for control systems. The team is supported by a National Laboratory equipped with a complete suite of testing systems for renewable energy generation control and maintains deep			

					collaborations with leading universities and industry partners both domestically and internationally.			
9	Mechanics; Naval Architecture and Ocean Engineering; Power Engineering and Engineering Thermophysics; Mathematics/Computational Mathematics	Wind Turbine Multidisciplinary Modeling & Simulation Engineer	**Research Area:** Multiphysics simulation and high-performance computing of wind turbine loads **Research Scope:** Development of computationally efficient multidisciplinary simulation algorithms, advanced dynamic models, and high-performance heterogeneous parallel computing methodologies for wind turbine and wind farm applications	Planned intake: 2–3 students Training duration: 1–6 years, determined by the progress of the research project	Co-supervisor：Wang Xiaodong, Professor, Doctoral Supervisor.The Wind Power Research Institute focuses on large-scale wind turbines, developing multidisciplinary simulation and integrated design algorithms and software, advancing key technologies for	1.Age generally not exceeding 35 years; for majors with urgent talent needs, age or graduation year limits may be appropriately relaxed; 2.Hold a background in mechanics, power engineering and engineering thermophysics, naval architecture and ocean engineering, computational mathematics, or related disciplines; 3.Have published one or	1.Annual salary starts at 350,000 RMB per year. 2.National and local subsidies start at 200,000 RMB per year.The subsidy will be provided for up to two years. 3.Sufficient research funding will be provided. 4. Experimental Facilities: Dedicated	The applicant shall first communicate with the prospective supervisor and obtain their consent. Afterward, the research team will conduct qualification review and an entry interview. Candidates who pass the interview assessment will

					load calculation and design of wind turbines, and high-precision aeroelastic methods for blades.	more relevant research papers as first author in SCI journals; 4.Possess good English listening, speaking, reading and writing skills, and be capable of conducting independent scientific research; 5.Comply with Chinese laws and regulations as well as institutional rules and regulations.	laboratory space and necessary equipment provided. 5. Support Services: Assistance with visa processing, accommodation arrangements, and children's education services.	be submitted to the director meeting for final review and approval.