



## **Job Posting: Postdoctoral Research Associate Position on In-situ ETEM Characterization of Thermal Catalyst Deactivation and Regeneration**

The University of Connecticut (UConn), one of the top 20 public universities in the nation, invites applications for a Postdoctoral Research Associate position in Prof. Yuanyuan Zhu's research group in the Department of Materials Science and Engineering (MSE) and the Institute of Materials Science (IMS). Applicants with a strong background in nuclear radiation effect characterization and in-situ transmission electron microscopy (TEM) are encouraged to apply. In this position, you will have the opportunity to engage creative research on investigating structure-property dynamics in the degradation of fusion energy materials including but not limited to plasma facing materials. You will have the opportunity to work on high-profile Fusion Energy Science projects and perform in-situ (gaseous) environmental microscopy at our latest InToEM center (<https://today.uconn.edu/school-stories/intoem/>).

UConn is entering a transformational period of growth supported by the \$1.7B Next Generation Connecticut (<http://nextgenct.uconn.edu/>) and a bold new Academic Plan: Path to Excellence (<http://issuu.com/uconnprovost/docs/academic-plan-single-hi-optimized-1>). As part of these initiatives, UConn has recently constructed two state-of-the-art buildings with a primary focus on materials research. The first is the UConn-Thermo Fisher Scientific Center for Advanced Microscopy and Materials Analysis (CAMMA), featuring seven new electron and ion beam instruments including multiple TEM, SEM, and FIB systems in a purpose-built Advanced Characterization Laboratory. Additionally, the MSE department and IMS have relocated to the new, \$200M Science1 facility. Based in a bucolic setting with convenient access to major metropolitan areas like Boston, Hartford, New York, and Long Island Sound, the UConn community enjoys a low cost of living, expansive campus grounds, a thriving materials department and powerful centers (IMS and C2E2), strong support for postdocs, extensive ties to industry and national labs, and notably, the university president herself hails from our very own MSE department.

### **DUTIES AND RESPONSIBILITIES**

The successful candidate will share a deep commitment to transmission electron microscopy. Working under the supervision of Prof. Yuanyuan Zhu (Group Homepage: <https://zhu.mse.uconn.edu>; Research Page: [https://zhu.mse.uconn.edu/research/research\\_catalysis\\_trashed/](https://zhu.mse.uconn.edu/research/research_catalysis_trashed/)) the candidate will be expected to lead TEM and in-situ Environmental TEM (ETEM) research to further the understanding of heterogeneous catalyst deactivation and regeneration. The candidate will also contribute to sample preparation and characterization, mentor graduate and undergraduate students; write progress reports; interact with research collaborators; prepare and maintain lab equipment and supplies, submit and publish peer reviewed journal papers.

### **MINIMUM QUALIFICATIONS**

An earned doctorate in Materials Science, Chemistry, Nanoscience, or a related discipline. A strong background and extensive research experience in Catalysis, Nanomaterials Physicochemical Property Characterization, Thermogravimetric Analysis (TGA), Raman, XPS, Transmission Electron Microscopy and In-situ/Operando Characterization. Good written and verbal communication skills. Good research capabilities as evidenced by a record of publication of results in peer-reviewed journals and external presentations at scientific conferences.

### **PREFERRED QUALIFICATIONS**

Additionally, a strong background in one or several of these fields is desirable: heterogeneous catalysis, surface science, phase transition, reaction kinetics. The candidate is expected to be proficient at three or more of the following techniques including but not limited to: in-situ heating TEM, SAED, Nanobeam Electron Diffraction, HRTEM, EDS mapping, core- (and low-) loss EELS. Skills and experience in in-situ gas cell ETEM and advanced TEM data processing (e.g., machine learning) are highly desired. Strong interpersonal skills including the ability to interact effectively with staffs, students and collaborators.

## APPOINTMENT TERMS

The selected candidate is expected to start immediately or upon mutual agreement. This is a full-time (12-month appointment) position, and is renewable every year. The successful candidate's primary academic appointment will be at the UConn main campus in Storrs, CT. Salary will commensurate with qualifications and experience.

## TO APPLY

Please submit the following: a **cover letter; curriculum vitae (with a full list of publication), copies of two representative publications** to [yuan.2.zhu@uconn.edu](mailto:yuan.2.zhu@uconn.edu), with a subject title "CatalysisPostdoc\_yourname".

Evaluation of applicants will begin immediately and continue until the position is filled. Employment of the successful candidate will be contingent upon the successful completion of a pre-employment criminal background check.

All employees are subject to adherence to the State Code of Ethics, which may be found at <http://www.ct.gov/ethics/site/default.asp>.

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*The University of Connecticut is committed to building and supporting a multicultural and diverse community of students, faculty, and staff. The diversity of students, faculty, and staff continues to increase, as does the number of honors students, valedictorians and salutatorians who consistently make UConn their top choice. More than 100 research centers and institutes serve the University's teaching, research, diversity, and outreach missions, leading to UConn's ranking as one of the nation's top research universities. UConn's faculty and staff are the critical link to fostering and expanding our vibrant, multicultural, and diverse community. As an Affirmative Action/Equal Employment Opportunity employer, UConn encourages applications from women, veterans, people with disabilities, and members of traditionally underrepresented populations.*