



The Combustion Institute

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Research Chemical Engineer

This announcement is advertising two vacancies in the Engine Combustion Branch of the Propulsion Division at the NASA Glenn Research Center, located in Cleveland, Ohio.

The Engine Combustion Branch conducts fundamental and applied research to advance the technology of injectors, low emissions combustion concepts and combustion processes for aeronautical gas turbine engines and rocket engines. The work of the branch addresses various types of combustors applicable to high-speed aircraft, rotorcraft, general aviation/commuter aircraft, subsonic transports, launch vehicles, spacecraft and cruise missiles for civil and military applications. The branch conducts experiments and applies advanced computational methods to assess the potential of unique concepts, demonstrating proof-of-concept and advancing technology readiness.

The incumbent serves as a Chemical Engineer and performs work involving research, development, evaluation, or analysis of chemical energy processes in aerospace applications. The work may be experimental, computational, and/or analytical in nature. These positions are engaged in the investigation and development of liquid, solid, and hybrid fuels and other propellants, and the combustion processes by which chemical energy is converted to propulsive power. At higher grade levels, duties may also include monitoring contractors engaged in this work.

This is a bargaining unit position.

***As identical vacancies are identified, additional selections may be made from this announcement.

***Recruitment/relocation incentives and travel/transportation expenses are not available for these positions.

***All positions will be filled at Step 1 of the grade level, unless Highest Previous Rate applies for current or former Federal employees.

To receive consideration, you must submit a resume and answer NASA-specific questions. The NASA questions appear after you submit your resume and are transferred to the NASA web site. If you successfully apply, USAJOBS will show your application status as 'Received'. If your status is 'Application Status Not Available', you have not successfully applied. Do not rely on a USAJOBS

email to confirm successful application. Only an email from NASA confirms a successful application.

Job Details

The incumbent performs advanced training duties in research which develops the position in professional scientific and engineering work which is systematic, critical, intensive investigation directed toward discovering, disseminating, and applying new or expanded knowledge in a professional discipline. Research includes, but is not limited to, empirical and theoretical investigations with one or more of the following objectives: to determine the nature, magnitude, and interrelationships of scientific phenomena and processes; to create or develop empirical, theoretical, or experimental means of investigating such phenomena and processes; or to develop principles, criteria, methods, and data of general applicability.

The employee plans and conducts complex analysis, studies, tests and diagnostic or computational tool development in support of major organization programs, including analysis of novel, unprecedented, or controversial problems. Testing and analysis involve several engineering disciplines such as fluid mechanics, multiphase flow, thermodynamics, chemical kinetics and heat transfer. Applies findings from comprehensive technical reviews of literature published within the agency, other agencies, private industry, and research institutions in the development of national program guidance, mission guidance, or directives in areas such as fluid mechanics, fuel specifications and handling, or propulsion and power. Assures application of the latest technology in missions or programs by relying on experience developed, seeks guidance from more experienced engineers when necessary, and keeps abreast of current developments in related technology fields. Builds liaisons with engineers who are experts in related fields to maintain awareness of the latest trends and innovations in the field.

The employee authors technical reports and makes presentations to NASA management and technical audiences in support of the assigned work and to disseminate technical information to the appropriate sectors. Integrates various study and analysis results into comprehensive technical briefings, reports, and technical papers. Research studies result in a series of publications that answer important questions in the scientific field, account for previously unexplained phenomena, result in important changes in existing products, processes, or techniques, or are definitive of a specific topic area.

Essential Requirements

- Position subject to pre-employment background investigation
- A one-year probationary period may be required
- Applicants must meet all qualification requirements by appointment date
- Occasional travel may be required

In order to qualify for this position you must meet the Basic Education Requirement

Applicants must have successfully completed an undergraduate or graduate degree with a major in either a) engineering from a college or university that has ABET accredited engineering programs or b) Physical Science, Mathematics, Life Science, Computer Science, Other fields of science.

Degrees in engineering technology are not considered to be qualifying for this position.

The degree must have been received in the year of, or any year subsequent to the original date of accreditation.

To find out if a school has an ABET accreditation, go to [ABET accredited schools](#)

Applicants must list their majors, related coursework, and GPA.

In addition to meeting the Basic Education Requirements candidates must also meet additional qualification requirements:

QUALIFICATIONS FOR THE GS-9:

1. Have one year of professional, directly related specialized experience equivalent to the GS-7 level in the Federal service which demonstrates:

- knowledge in experimental methods, measurement techniques and combustion processes.

Or

- knowledge in computational fluid dynamics and combustion processes.

OR

2. Completed all requirements for a master's or equivalent graduate degree in an appropriate field.

OR

3. Completed 2 full academic years of graduate education in an appropriate field.

OR

4. Have an equivalent combination of experience and graduate study as discussed in 1, 2 and 3 above.

QUALIFICATIONS FOR THE GS-11:

1. Have one year of professional, directly related specialized experience equivalent to the GS-9 level in the Federal service which demonstrates:

- knowledge in combustion processes and the ability to develop and apply computational fluid dynamic codes to complex physical processes, such as combustion.

Or

- knowledge in combustion processes and the ability to apply experimental methods and measurement techniques to complex physical systems, such as combustion systems.

OR

2. Completed all requirements for a doctoral degree (i.e., Ph.D. or equivalent) in an appropriate field.

OR

3. Completed 3 full academic years of graduate education in an appropriate field.

OR

4. For research positions only, completed all requirements for a master's or equivalent graduate degree in an appropriate field.

OR

5. Have an equivalent combination of experience and graduate education as discussed in 1, 2 and 3 above.

REQUIRED COLLEGE MAJORS for applicants qualifying on the basis of education only:

Aeronautical Engineering, Aeronautics, Aerospace Engineering, Astronautics, Chemistry, Applied Mechanics, Engineering Mechanics, Mechanical Engineering, Nuclear Engineering, Nuclear Engineering Physics, Physics, Applied Physics, Engineering Physics.

Other majors will qualify if the major includes or is supplemented as follows:

Electrical Engineering, Electronics Engineering, Applied Mathematics (or other field), if the major includes or is supplemented by one course in thermodynamics, nuclear physics, rocket propulsion fundamentals, gas dynamics or modern or molecular physics; Astronautical Engineering, Chemical Engineering, Pure Mathematics (or other related field), if includes or is supplemented by nine semester hours (or the equivalent) in physics, thermodynamics, chemistry or closely related fields.

FOREIGN EDUCATION:

ABET accreditation requirement applies to foreign education. Applicants who have completed part or all of their education outside the U.S. must have their foreign education evaluated by an accredited organization to ensure that the foreign education is comparable to the education received in accredited educational institutions in the U.S. If selected, a written evaluation of any foreign education must be provided to the Human Resources official making the offer. Please indicate in your resume that you have had your foreign education formally evaluated. Failure to provide this evaluation will result in your being found unqualified for the position.

U.S. citizenship is required.

Combustion Job Opportunity

Security Clearance

Not Applicable

How to Apply

<https://www.usajobs.gov/GetJob/ViewDetails/457361500/>

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