



Postdoc Position – Materials Scientist

Daytona Beach, FL

Start Date: Immediate

Sensatek's mission is to become a market leader in asset health monitoring. We are pioneering the digitalization of industrial machines in harsh environments using intelligent instrumentation and innovative processes. We have an exciting opportunity for a Materials Scientist to have a significant role in the development of high temperature wireless RF sensor systems involving high temperature ceramics and their electrical properties, refractory metals, and extreme environment material deposition.

Job title: Materials Scientist R&D

Job Summary:

Strong background in ceramics and high temperature metals desired. Ideally electrical properties of ceramics. Deep research needed into dielectric permittivity and loss tangent responses to temperature. Needs to be able to describe macroscopic measurements such as resistivity and permittivity in terms of mesoscale and atomic scale fundamental properties. Experience with flame spray application or PVD application of ceramics a big plus. Candidate will be an important part of a team commercializing a currently working system. However, many new avenues exist in this job for research into new forms, types, and applications of this system, including the opportunity to publish based on the work. This job is not for the faint of heart.

Major Duties and Responsibilities:

- The position involves innovative thinking, prototype development, fabrication, implementation and demonstration
- Serve as a Materials Science Subject Matter Expert in support of the wireless sensor research, prototype, and fabrication
- Perform detailed analysis of high temperature and high frequency electrical properties of deposited ceramics
- Analyze ceramic and metallic compositions for allotropic stability in terms of macroscopic observables.
- Microscopically inspect, design, and recommend deposition and bonding methodologies for extremely high temperature combinations of ceramics and metals



- Lead the team to characterize ceramic powders/paste and their processing, in particular sintering, post-processing characterization.
- Work with mechanical, structural and thermal analysis teams performing parametric studies and optimization of thermally sprayed ceramic/metal designs
- Use fundamental materials knowledge to postulate optimal formulations and designs for new uses and material combinations.
- Work on a variety of engineering assignments, collaborating with engineers, and will be expected to produce reliable software and systems and contribute to funding proposals as needed.

Basic Qualifications and Desired Skills:

- PhD in Materials Science or similar physics degree
- Deep knowledge of ceramics systems, especially high temperature and thin film ceramics
- Ability to relate mesoscale or atomic scale properties to macroscale observables
- Knowledge of electrical properties of ceramics, including permittivity, loss tangent, resistivity, ionic conduction, and how these change over temperature
- Synthesize extensive background knowledge and complex observables to postulate recommendations for ceramic system improvements
- Analyze ceramic bonding to metals and failure modes thereof
- Expertise in bonding metallic thin films to ceramics for high temperature use is a big plus
- Familiar with sintering of metallic powders and metallic powder/solvent systems
- Deep analysis of effects of high temperature on ceramic/metal systems
- Familiarity with flame spray or PVD deposition of ceramics is a big plus
- Use of SEM, XRD, strain testers, and materials testing tools

Compensation and terms:

This Postdoc opportunity is for a period of 12 months. This position includes vision, dental, and healthcare benefits. After 12 month there will be an opportunity for ongoing employment.

Sensatek provides equal employment opportunities to all employees and applicants for employment. Consideration for employment with Sensatek is on the basis of qualifications and experience and prohibits discrimination and harassment of any type without regard to race, color, religion, age, sex, national origin, disability status,



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This policy applies to all terms and conditions of employment, including recruiting, hiring, placement, promotion, termination, layoff, recall, transfer, leaves of absence, compensation, and training.

Interested parties should send CV to Azryana Soto at discovering@sensatek.com