



**Postdoctoral Positions for Cosmochemistry or Metamorphic Petrology
WiscSIMS Laboratory,
Department of Geoscience, University of Wisconsin-Madison**

WiscSIMS Laboratory is currently accepting applications for three Postdoctoral Research Associate positions. **Two of the three** positions would likely to be filled.

Postdoctoral Research Associate Position #1: 100% Cosmochemistry Research

A Postdoctoral Research Associate position is currently available in the Department of Geoscience, University of Wisconsin-Madison for NASA-funded Cosmochemical research to perform in-situ isotope analyses of extraterrestrial materials, including meteorites, comet 81P/Wild 2 returned particles (NASA Stardust Mission), and Interplanetary Dust Particles (IDP) using the IMS 1280 in the WiscSIMS Laboratory.

The WiscSIMS laboratory is capable of obtaining high precision oxygen three isotope analyses from ~10 μm spots ($\pm 0.3\%$, 2SD) down to 1-2 μm spots ($\pm 1-2\%$, 2SD). We have an upgraded high brightness oxygen primary ion source, which improved analytical capability of SIMS Mg isotope analyses. Current cosmochemical research activities are shown at: <http://geoscience.wisc.edu/geoscience/people/staff/scientist/name/noriko-kita/>

Primary responsibilities will be to conduct oxygen isotope studies on cometary IDPs and the comet Wild 2 particles in order to understand evolution of solid particles in the outer Solar System. Additional analyses of Wild 2 particles may also be performed. He/she may be involved in on-going research on Al-Mg chronology of chondrules in Noriko Kita's group. Experience with electron microscopy (EPMA or SEM) is required. Preference will be given to those who have experiences in operating SIMS or other isotope ratios mass spectrometers, and/or who are skilled in handling small particles for advanced microscopy. Previous experience with studying extraterrestrial materials is preferred. This position is available for one year and may be renewed to maximum three years depending on the performance and availability of fund.

Postdoctoral Research Associate Position #2: 100% Metamorphic Petrology Research

A postdoctoral researcher will conduct research that aids in understanding the formation of intragrain oxygen isotope zoning and its utility for investigating thermal and fluid histories of crystalline rocks. She/he will support and extend currently NSF-funded research on intragrain oxygen isotope zoning as a tool for extracting thermal histories in metamorphic core complexes. Possible postdoctoral projects depend on the specific interests and expertise of the candidates and could include:

- Experimental studies to better constrain oxygen isotope fractionations, diffusivities, and recrystallization rates in rock-forming phases at greenschist and lower-temperature conditions
- Combining Ar-Ar and SIMS $\delta^{18}\text{O}$ analysis for thermal history modeling
- Development of SIMS oxygen isotope standards for phases relevant to thermal history modeling
- Development of joint SIMS U-Pb and oxygen isotope standards for accessory minerals
- Development of diffusion modeling software FGB for thermal history inversion and use with multiple geospeedometers

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Responsibilities will be to conduct the selected project, interact and collaborate with graduate students working on related research, and interact with the WiscSIMS lab when preparing and analyzing materials. For individuals interested in the petrologic projects, experience with transmitted light microscopy and electron microscopy (SEM and/or EPMA) are required. Preference will be given to individuals with experience in experimental petrology, field studies of metamorphic rocks and structural geology, and/or experience with Ar-Ar geochronology as relevant to their project interest. In the case of software development, experience with programming in Python and C are required. This position is available for one year and may be renewed to a maximum of three years depending on performance and availability of funds.

Postdoctoral Research Associate Position #3: 50% Cosmochemistry or Metamorphic Petrology Research, 50% WiscSIMS analytical support

Half of a postdoctoral associate's time will be spent conducting cosmochemistry or petrology research according to his/her interest and as outlined in Positions #1 and #2 above. The other half of the postdoctoral associate's time will be spent supporting SIMS isotopic analysis for internal and external WiscSIMS lab users with geoscience applications. The WiscSIMS laboratory is National Facility for Stable Isotope Geochemistry, supported by the NSF Facility Program (Division of Earth Science, Instrumentation and Facility Program). The postdoctoral associate will receive extensive training to learn to tune and operate the Cameca 1280 IMS instrument for stable isotope analysis, especially oxygen and carbon, but also potentially sulfur, silicon, and trace elements. Supporting analysis of other users will provide opportunities for the postdoctoral associate to collaborate with a range of internal and external scientists, and possibly co-author publications that utilize SIMS data.

Previous experience with SIMS analysis or other isotope ratios mass spectrometers is required. Experience with SIMS sample preparation and supporting characterization techniques (e.g., SEM and EPMA) is highly preferred.

Please send a letter of interest indicating the position for which you are applying, CV, and the names and contact information of 3 references to Dr. Noriko Kita (noriko@geology.wisc.edu) for positions #1 and #3, and Dr. Chloe Bonamici (bonamici@wisc.edu) for positions #2 and #3. Evaluation of applications will begin immediately and will continue until the position is filled. UW is an equal opportunity employer.

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