Title: Finding extra-terrestrial organics and water in Itokawa samples returned by the Hayabusa mission.

Abstract:

Understanding the true nature of extra-terrestrial water and organic matter that were present at the birth of our solar system, and their subsequent evolution, necessitates the study of pristine astromaterials. Such investigation necessitates the availability of pristine samples of astromaterials—samples that have not been compromised by terrestrial contamination, and thus preserve the intrinsic states of the materials' physical, chemical, organic and other properties In this connection, the Hayabusa mission of the Japan Aerospace Exploration Agency (JAXA) is the first asteroidal sample return mission, which has successfully recovered regolith particles from the near-Earth S-type asteroid 25143 Itokawa in 2010. The Hayabusa particles were linked to LL ordinary chondrites based on mineralogy, chemistry and oxygen isotope compositions. Investigation of mineralogy, water and organic contents and other results an Itokawa particle will be discussed.

About the Speaker:

Dr Queenie Chan is an Assistant professor at the Royal Holloway University of London, UK. She is a planetary scientist – Meteoritics. Her research focuses on understanding the earliest chemical reactions involving liquid water in the solar system, and how the individual events turned simple life's building blocks into increasingly complex molecules that ultimately yielded life. Her work typically involves the analysis of the chemical and organic contents of astromaterials including meteorites and asteroidal/cometary samples returned by space missions.