

Application for a:	Outgoing Scheme NEWFELPRO Fellowship for senior researcher
Proposal Acronym:	AERONAR
Proposal Title:	Chemical nature of size segregated water soluble organic aerosols and their nitro-aromatic constituents
Research area(s):	Environment and geosciences ENV
Research sub-disciplines:	Atmospheric chemistry - air pollution
Category of research:	basic
Duration in months:	36
Keywords:	aerosols, water soluble organic matter, HULIS, nitro-aromatic compounds, surfactants, liquid chromatography-mass spectrometry, electrochemistry
Abstract:	<p>Water soluble organic matter (WSOM) as a significant fraction of atmospheric organic aerosols affects issues ranging from visibility impairment to aerosol effects on the Earth's radiation balance. Our understanding of the chemical composition of WSOM and its humic-like (HULIS) fraction at the individual component level is still limited. Chemical characterization of just recently detected and potentially toxic nitro-aromatic compounds (NAC) in aerosols is an emergent issue to better understand their impact to the atmospheric chemistry and air quality. The AERONAR represents a first attempt to study the aerosol size segregated WSOM over the seasons with an emphasis on NAC through investigating their extraction efficiency, speciation and quantification, surfactant nature and interactions with environmentally relevant micro constituents. Project will contribute to fundamental understanding of the chemical nature, sources and the mechanisms underlying WSOM transformation in the atmosphere.</p>
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?	No