Application for a:	Incoming Scheme NEWFELPRO Fellowship for senior researcher
Proposal Acronym:	Anomalous diffusion
Proposal Title:	Modeling anomalous diffusion by generalized Langeven, Fokker-Planck equations and fractional diffusion-wave equations
Research area(s):	Mathematics MAT
Research sub-disciplines:	Analysis, Partial Differential Equations, Mathematical Physics
Category of research:	applied
Duration in months:	24
Keywords:	fractional calculus, Anomalous diffusion, Langevin Equation,Fokker-Planck equation of fractional order, Mittag-Leffler functions, complete monotonicity, diffusion-wave models of distributed order.

Abstract:	The objective of this proposal is to consider some fractional differential equations of modern physical interest.Recent advances of fractional differential equations are stimulated by new examples of applications in fluid mechanics, viscoelasticity, electromagnetism, hydrology, mathematical biology, electrochemistry, robotics, signal processing, turbulence and many other problems. The fractional differential equations are a useful tool for the modelling of many anomalous phenomena in nature and in the theory of complex systems. The main physical purpose for adopting and investigating diffusion equations of fractional order is to describe phenomena of anomalous diffusion usually met in transport processes through complex and/or disordered systems including fractal media.

Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?	No