

Proposal Acronym	PHENEMICS
Proposal Title:	Phenomenological Modelling of Carbonation-Induced Corrosion of Radioactive Waste Disposal Structures
Surname:	Serdar
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Research area:	Information science and Engineering ENG
Sub-discipline of research area:	CHE - Corrosion CHE - Characterization methods of materials ENG - Civil Engineering, marine, hydraulic engineering, waste treatment ENG - Materials Engineering
Category of research:	applied
[Redacted]	[Redacted]
Abstract:	In radioactive waste disposal structures, corrosion of reinforcement in concrete is recognised as one of the jeopardising phenomena that could lead to alterations and instabilities, such as release of radionuclides, uncontrolled underground degradation, and irretrievability, mostly due to the several hundred years of exposure of concrete in changing environment. The aim of the project is to propose a phenomenological model to the entire propagation process of carbonation-induced corrosion of reinforced concrete structures used for radioactive waste disposal. The model needs to couple chemistry-transport and mechanical damage models, but also to describe all interconnected and consequential phases of this specific corrosion process. The project is regarding three prominent scientific and technical topics: 1) solutions for long-term disposal of radioactive waste, 2) nano- and micro-scale techniques for evaluating macro-scale properties of materials, and 3) use of sustainable
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?:	No