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## Development of Radiometric Methods for Optimization of Phosphate Transport Process by "Slurry Pipe"

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Moroccan reserves of phosphates are the largest ones in the world. They are estimated to more than 85 billion m<sup>3</sup>. The drainage of the phosphate rock from the mines site to the chemical sites, which is currently done by train, requires dry phosphate to lower the humidity in order to carry it cheaply.

However the chemical processing of raw phosphates, to get the final products (phosphoric acid, fertilizers...) requires large amounts of water to be added back. For the transport of phosphate, it has been decided to build a pipeline between Khouribga mines to JorfLasfar chemical units, for convergence between cost reduction and rationalization of water and energy consumption.

Determination of physical parameters, such as concentration, viscosity, flow rate, etc... of the material inside the pipe becomes a key issue for handling and maintaining the whole system. The current study aims to develop radiotracer methodologies and specific nucleonic control systems to obtain such information. The first phase of the study consists in carrying out a series of field experiments, aimed at flow measurement of pulp phosphates, transported by gravity, by using radiotracers (<sup>131</sup>I) in various flow conditions.

### Country/Organization invited to participate

Morocco

**Primary author:** Ms MIMOUNT, Samira (Centre National de l'Énergie, des Sciences et des Techniques Nucléaires (CNESTEN), Morocco)

**Co-authors:** Mr SAADAOU, Abdelaziz (Centre National de l'Énergie, des Sciences et des Techniques Nucléaires (CNESTEN), Morocco); Ms EL KORCHI, Khadija (Centre National de l'Énergie, des Sciences et des Techniques Nucléaires (CNESTEN), Morocco); Ms HAKAM, Oum Kaltoum (University of Ibn Tofail-Kenitra, Morocco); Mr ALAMI, Rachad (Centre National de l'Énergie, des Sciences et des Techniques Nucléaires (CNESTEN), Morocco)

**Presenter:** Ms MIMOUNT, Samira (Centre National de l'Énergie, des Sciences et des Techniques Nucléaires (CNESTEN), Morocco)

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