Internship Proposal

"2026–2027 | Master's internship (M2)"

Title: Nanoparticle Transport in Coated Porous Media

Scientific supervisors:

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Internship laboratory: Laboratoire Eau et Environnement (LEE), Université Gustave Eiffel Campus de Nantes, Allée des Ponts et Chaussées, Route de Bouaye CS 5004, 44344 Bouguenais Cedex, France

Compensation: The internship allowance is approximately €600 per month. The exact amount is calculated each month based on attendance and the applicable statutory daily rate. Subsidised lunches are also available to interns.

Internship duration: 6 months, from February (March) to July (August) 2027.

Internship description

Understanding nanoparticle transport in porous media is essential for predicting their mobility in soils and potential transfer to groundwater. Coatings on sand grains can influence nanoparticle retention, yet their effects remain incompletely understood.

This internship aims to investigate nanoparticle transport and retention in saturated porous media by comparing clean sand with sands bearing organic, mineral and organo-mineral coatings.

The student will conduct column experiments and analyze collected effluent samples using single-particle inductively coupled plasma mass spectrometry (SP-ICP-MS) to determine nanoparticle number concentrations and size distributions. These measurements will help assess how sand coatings affect nanoparticle mobility and changes in particle populations during transport.

Candidate profile

The internship is suitable for a Master 2 or final-year engineering student in environmental science, chemistry, geosciences or a related field, with an interest in experimental research and data analysis. The internship will be conducted entirely in English; fluency in English is therefore required.

Application: To apply, please send your CV and cover letter to all four supervisors at the email addresses listed above, using the subject line "Nanoparticle transport in coated porous media | Internship proposal".