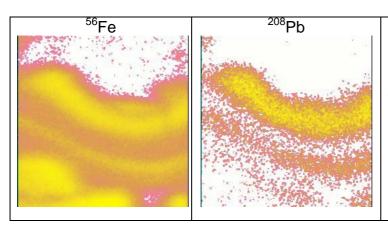
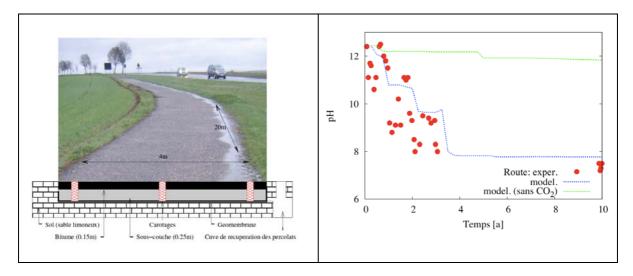
Environmental impact of municipal solid waste incineration bottom ash recycled in road construction

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The behaviour of bottom ash from municipal solid waste incineration (MSWI) reused as road basement has been studied to assess of their environmental impact. These wastes present geotechnical properties that make them likely to be partially substituted for natural aggregates, a natural resource decreasing in highly urbanized areas. The study has combined physicochemical and mineralogical characterizations (SIMS, EAFS, environmental SEM), experiments at different scales (laboratory tests and a ten-year old pilot road), and an operational numerical tool (reactive transport modelling) used for decision aid with respect to MSWI leachate quality and long-term evolution.



High-resolution image obtained by ion microprobe of a MSWI bottom ash showing lead incorporation in iron minerals. This type of analysis helps to clarify the distribution of pollutants in the various solid phases and, depending on the stability of these phases, the risk of pollutant fate.



Reactive transport modelling (HYTEC code) of pH evolution of leachates collected under a pilot road site showing a rapid decrease of the alkaline load (chemical impact) over time.