



## **Investigation of transport pathways in shales and tight reservoirs by means of liquid metal injection**

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Transport in tight and fine-grained rocks is complex because of the interaction between transport in the nano-scale pore system and transport through naturally and induced fractures. Advanced imaging technologies enable visualization of the microstructure at several scales and identifying and quantifying the pore and fracture network. However, in most of the cases the heterogeneity and small scale nature of the grains and pores complicates investigation of the transport network at high resolution and representative scale. In this respect, Liquid Metal Injection followed by Broad Ion Beam milling and Scanning Electron Microscopy can play a role. The method can show the connected fracture and pore network at centimeter scale and at 5-10 nanometer resolution. Furthermore, it allows assessing the transport network at specific pore entry pressures.