applied sciences

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Supplementary material of

Two-Dimensional Modeling Approach for Electrokinetic Water Transport in Unsaturated Kaolinite

Rubén López-Vizcaíno*, Vicente Navarro and Ángel Yustres*

Geoenvironmental Group, Department of Civil Engineering and Construction, Civil Engineering School, University of Castilla-La Mancha, Avda. Camilo José Cela s/n, 13071 Ciudad Real, Spain

* Correspondence: ruben.lopezvizcaino@uclm.es (R.L.-V.); angel.yustres@uclm.es (Á.Y.)

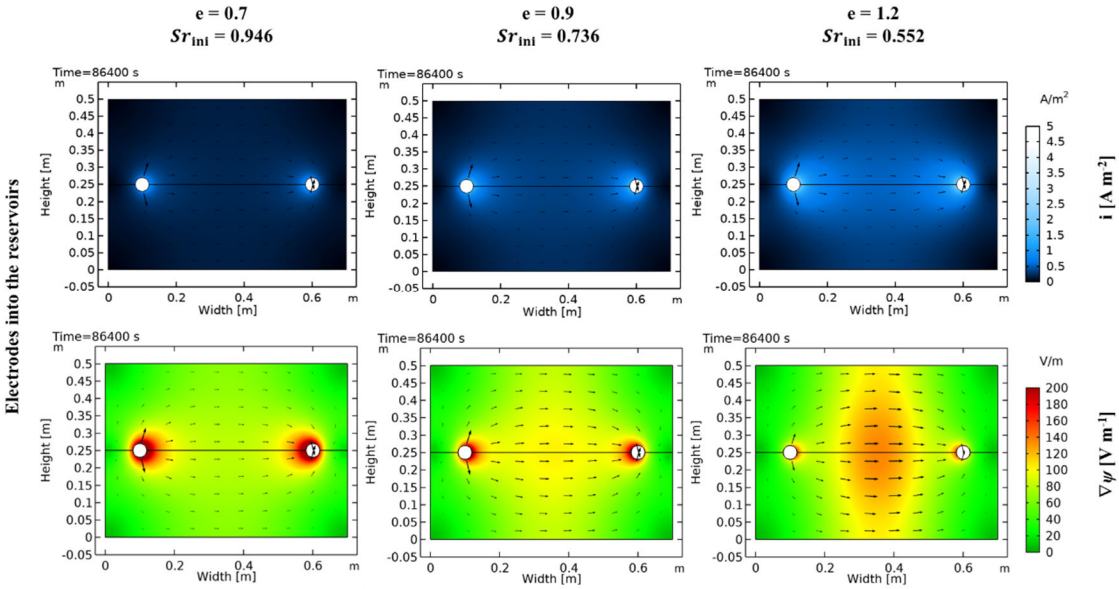


Figure S1. 2-D maps of current density and electric potential gradient evaluated at 86400 s and three void ratios: 0.7, 0.9 and 1.2, when the electrodes located into the electrolyte reservoirs corresponding with the configuration presented in Figure 1a. Electrical potential gradient applied 1 Vcm^{-1} .

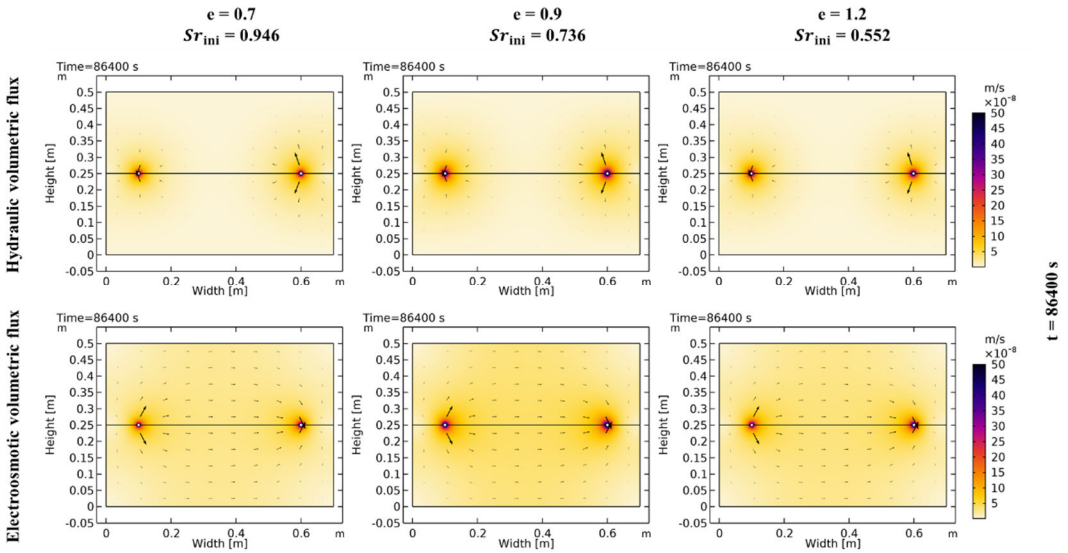


Figure S2. 2-D maps of hydraulic and electroosmotic volumetric fluxes evaluated at 86400 s and three void ratios: 0.7, 0.9 and 1.2, when the electrodes are inserted into the porous medium

corresponding with the configuration presented in Figure 1b. Electric potential gradient applied 1 Vcm^{-1}.

Table S1. Values of the physical parameters as a function of the void ratio range studied.

Parameter	**Description**	**Unit**	**Values**		
e	Void ratio	-	0.700	0.900	1.200
ϕ	Porosity	-	0.412	0.474	0.545
ρ_{dry}	Dry density	$kg\ m^{-3}$	1558.824	1394.737	1204.545
Sr_{ini}	Initial degree of saturation	-	0.946	0.736	0.552
s_{ini}	Initial matric suction	kPa	174.824	518.046	904.777
K_{sat}^{h}	Saturated hydraulic conductivity	$m\ s^{-1}$	1.793×10^{-10}	8.451×10^{-10}	1.844×10^{-9}
K_{sat}^{eo}	Saturated electroosmotic conductivity	$m^2\ s^{-1}\ V^{-1}$	6.557×10^{-10}	1.876×10^{-9}	3.706×10^{-9}