

Laboratory experiments on streaming potential under high temperatures

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In order to estimate electrokinetic coupling coefficient under high temperature crustal conditions, laboratory experiments were carried out. First, a cylindrical rock sample covered with insulating jacket is set within a high temperature (up to 300 C) and high pressure (up to 250 bars) vessel. After pore fluid is introduced, the confining and pore pressures and temperature are adjusted.

Then sinusoidal pressure signal is added to one end of the sample, and streaming potential generated between the two ends of the sample is measured using platinum electrodes. The zeta-potential is calculated from measured values of streaming potential and resistivity of the sample.