Source rocks exhibit two-phase fluid storage and flow behavior that significantly departs from that of conventional reservoirs because of nanometer-size throat confinements. It is important to quantify two-phase flow in source rocks because of its implications on drainage volume and recovery factors via primary or secondary means. The nanometer range of throat sizes present in source rocks causes two-phase flow to be dominated by throat-wall effects which include electrochemical forces and fluid polarity. This presentation describes how nanofluidics experiments have been used to gain quantitative insight to dominant two-phase flow mechanisms taking place in nano confinements.

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