

Monitoring Saturated and Unsaturated Environments Using Microbial Potentiometric Sensors (MPS)

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Abstract:

The further development of the MPS system has enabled the direct interrogation of subsurface environments using biofilms that populating the surface of the sensors. The sensors require no maintenance or calibration and are ideal for long-term monitoring programs. The sensors are deployed in large arrays (200-300 sensors) to provide 3D-visualizations of the electrical potential within the subsurface environment. The sensor arrays connect to a solar-powered signal acquisition/communication (cellular) circuitry. The data are transmitted and stored in cloud-base storage system and downloaded by the user into open-source dashboards and visualization programs. We will present MPS data from several subsurface environments.