



Coupled Thermally-Enhanced Bioremediation and Renewable Energy Storage System

Ali Moradi, Jonathan O. Sharp, and Kathleen M. Smits

Summary: A method of treating contaminated soil using an in-situ thermally enhanced bioremediation system coupled to a subsurface renewable energy storage system.

Description: Thermally enhanced bioremediation has been previously used in a variety of environmental remediation scenarios, using existing methods to apply heat to the contaminated zone. Although existing methods are capable of producing ample heat for remediation enhancement, some of these methods demand high amounts of energy, making them very expensive. Renewable energy options have been proposed to address the high energy costs associated with this method; however, one limitation is the intermittency of the renewable energy supply. This invention presents a method treat contaminated soil using an in-situ thermally enhanced bioremediation system that is coupled to a subsurface renewable energy storage system. This method involves first treating contaminated soil using in-situ thermally enhanced bioremediation; the thermal system is powered by renewable energy and coupled with a long-term energy storage system for follow on energy requirements after remediation is achieved.

Main Advantages of this Invention:

- Ability to store energy during peak times and supply energy during off-peak times.
- Lowers the cost associated with treating contaminated soil
- After remediation goals are achieved, the thermal system can be used to store energy as heat for other uses.

Potential Areas of Application:

- Treatment of petroleum-contaminated soil

ID number: 16027

Intellectual Property Status: US provisional patent filed June 22, 2016

Opportunity: We are seeking an exclusive or non-exclusive licensee for implementation of this technology.

For more information contact:

William Vaughan, Director of Technology Transfer
Colorado School of Mines, 1500 Illinois Street, Guggenheim Hall Suite 314, Golden, CO 80401
Phone: 303-384-2555; e-mail: wvaughan@mines.edu

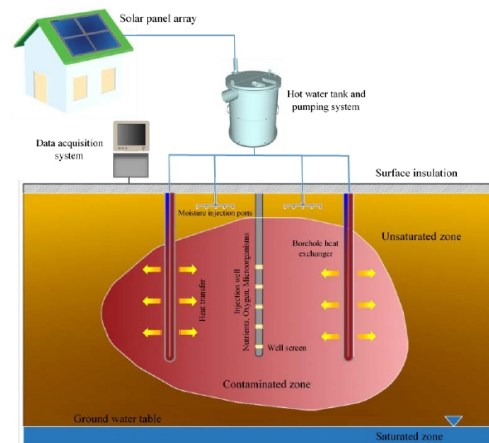


Figure 1. Schematic of the proposed coupled enhanced bioremediation-energy storage system