# Mineral Surfaces as Catalysts in Remediation Scenarios. (S09-mingelgrin184711-Oral)

**Authors:**

- U.Mingelgrin* - *Volcani Center, ARO, Bet Dagan, Israel*

## Abstract:

Abiotic processes are at times the preferred scheme for cleanup of contaminated sites. Conditions at the site may not support a suitable microbial population. Heterogenous degradation or fixation of a contaminant may be used to bring about, or at least enhance, detoxification of contaminated media, either in situ or after the pollutants (or the polluted medium) are removed from the site. Manipulation of environmental parameters such as pH, may accelerate the reaction between a mineral and a pollutant, but alteration of the mineral surface itself may be an even more efficient avenue to improve remediation. Modification of clay surfaces to enhance the breakdown of organic pollutants or the immobilization of trace metals will be demonstrated. Cleanup schemes that utilize surface reactions in combination with other processes will be discussed. Mechanochemistry, photocatalysis and sonocatalysis can be taken advantage of in order to increase the efficiency of surface reactions. The configuration in which a mineral is introduced to the treated medium plays an important role in its efficiency as a remediation agent. Wicks can be used to direct the flow of solution in a porous medium into aggregates of the active mineral.

**Corresponding Author Information:**

Uri Mingelgrin
Volcani Center, ARO, Israel
P.O.Box 6
Bet Dagan 50250
Israel

phone: (909) 787 4653
fax: (909) 7873993
e-mail: uriming@agri.gov.il

## Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 10:50 am

## Keywords:

mineral surfaces, surface catalysis, mechanochemical degradation