Abstract Submitted
for the OSS07 Meeting of
The American Physical Society

Experimental Measurements of Diffusivity of Vapors through Porous Substrates HONGYANG LI, CARLOS RINCON, ELIZABETH BOWDEN, ALI ZAND, YURI SIKORSKI, MATTHEW SANDERS, HOMAYUN NAVAZ, Kettering University, KETTERING UNIVERSITY AGENT FATE TEAM — The release of numerous toxic chemicals, such as hydrocarbons, pesticides, chemical warfare agents, etc.; into soil, subsurface, concrete, brick and asphalt poses a great threat to the biosphere environment. The quantification and extent of spread of these chemicals has primary importance for carrying out the remediation work. There are several well known spread mechanisms which govern the mass transport in porous media. They include various regimes of liquid and vapor transport/diffusion. Modeling the transport of vapors in porous substrates requires the knowledge of the diffusivity of each particular vapor in each substrate. We present a simple, effective and inexpensive experimental method and apparatus for measurement of vapor diffusivity in porous media.

Yuri Sikorski
Kettering University

Date submitted: 02 Apr 2007 Electronic form version 1.4