Abstract Submitted
for the GEC10 Meeting of
The American Physical Society

Destruction of volatile organic compounds under atmospheric conditions by usage of a multi stage packed bed reactor J. ROEPCKE, M. HUEBNER, INP Greifswald, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany, O. GUAITELLA, A. ROUSSEAU, LPP, Ecole Polytechnique, UPMC, Universite Paris Sud-11, CNRS, Palaiseau, France, INP- GREIFSWALD COLLABORATION, LPP, ECOLE POLYTECHNIQUE COLLABORATION — This contribution reports a new method used for the destruction of harmful volatile organic compounds, VOC, introduced by Whitehead, Harling and co-workers [1]. They used several packed bed reactors and reported that a serial arrangement of them leads to a nonlinear increasing of the destruction rate. This synergistic effect was investigated. Therefore, up to three model stages were combined, where one stage is made of one layer of glass beads held between two stainless steel electrodes. For a variable number of active stages the initial concentration of the test VOC ethylene was held constant. Contrary to what has been reported, the synergistic effect could not be confirmed. All gas compositions were identified and quantified using FTIR spectroscopy. Results are presented about the influence of variable amount of water, gas flow, inter stage distance and stability of the bed material.

[1] DOI: 10.1021/es703213p

Marko Huebner
INP Greifswald, Felix-Hausdorff-Str. 2, 17489 Greifswald

Date submitted: 12 Jun 2010 Electronic form version 1.4