



Contribution ID: 84

Type: Poster

## Electron Beam Techniques for Air Pollution Control

*Wednesday, 26 April 2017 14:15 (2 hours)*

### Abstract

Various technologies such as absorption, adsorption, incineration, biofiltration and advanced oxidation have been developed to treat air pollutants. However, these methods have some limitations such as a high pressure drop, short lifespan, large site, economics and formation of secondary pollutants. To solve these problems, recently, advanced oxidation processes have been studied. An electron beam (EB) technology is one of the most promising advanced technologies due to its special characteristics. The EB technologies for volatile organic and odorous compounds treatment are introduced in this paper. The removal efficiency of these compounds by an EB processing is discussed in diverse conditions, such as different initial concentrations, background gases, absorbed doses, relative humidities, etc. Furthermore, the characteristics and effects on new EB hybrid technologies designed to overcome problems of only EB system are reviewed. In addition, the limitations and potentials of EB technology for air pollution treatment are also discussed.

Keywords: Electron beam; VOC; Odor; Irradiation; Absorbed dose;

### Acknowledgments

The author would like to thank Clarian H. for her insightful contributions. This research was supported by the Nuclear R&D program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and Future Planning.

### Country/Organization invited to participate

Korea, Republic of

**Primary author:** Mr SON, Youn-Suk (Korea Atomic Energy Research Institute, Korea, Republic of)

**Co-authors:** Mr YU, Seungho (Korea Atomic Energy Research Institute, Korea, Republic of); Mr KIM, Tae-Hun (Korea Atomic Energy Research Institute, Korea, Republic of)

**Presenter:** Mr YU, Seungho (Korea Atomic Energy Research Institute, Korea, Republic of)

**Session Classification:** P-A1

**Track Classification:** MITIGATING THE IMPACT OF CLIMATE CHANGE