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## How to Apply Radiation Technology for Pollution Control

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Since 1980's radiation technology has been introduced to pollution control, over the past few decades, this technology has been developed aimed at ensuring the safety of gaseous and liquid effluents discharged to the environment. It has been demonstrated that flue gas treatment (SO<sub>x</sub> and NO<sub>x</sub> removal), wastewater purification and sludge hygienization by radiation can be effectively deployed to mitigate environmental degradation. Even they showed promising results through the operation of several pilot scale plants and industrial scale implementation, however, the technology was bogged and it needs to achieve a breakthrough. There are several drags to implement larger scale applications. Not like other industrial applications, the environmental plant should operate all the year round without stopping. Once it stops, the waste (stack gas or wastewater) will discharge without any treatment, and the stand-by system costs too much. Thus, technical upgrades to manage the plants in such cases are required. Radiation technology, like other technologies, also has strong completion in market with conventional pollution treatment technologies. And hence, it is necessary to decrease the capital cost with the operating cost to have competitiveness in waste treatment cost. Nowadays, the radiation processing equipments are getting more powerful and reliable, and ready to apply for pollution control, but required a systematic operation for preventing the shutdown of entire plant. To avoid the tough competition, it is better to find the niche applications that the radiation technology can do better, such as removal of EDCs and pharmaceutical residues in domestic wastes, VOCs removals from industries, sludge hygienization. Computational methods, mobile e-beam and other effective ways to confirm the laboratory result will help for easy scaling up to industrial implementation.

### Country/Organization invited to participate

Korea, Republic of

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