

# Institute of Environmental Process and Convergence

## Keywords

Environmental Policy, Process Analysis, Process Research & Development, E- learning

## Chief



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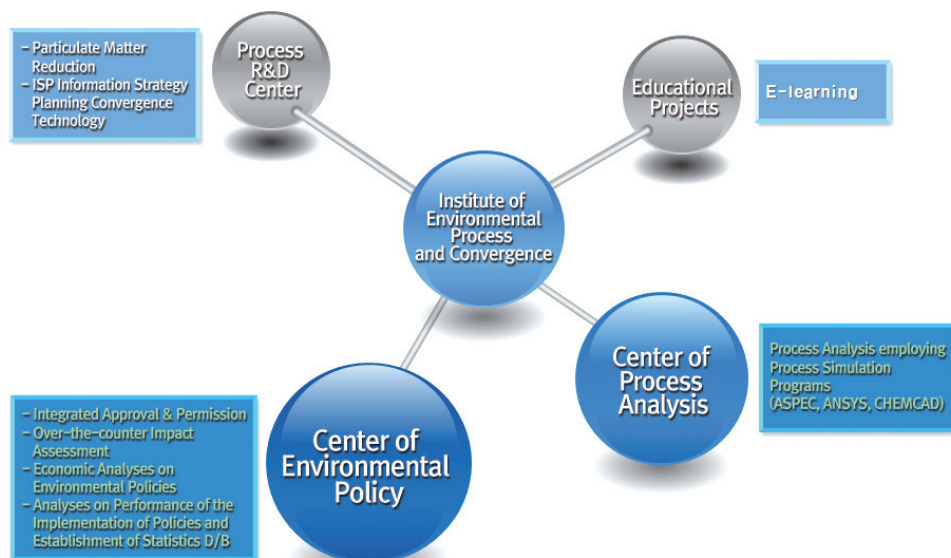
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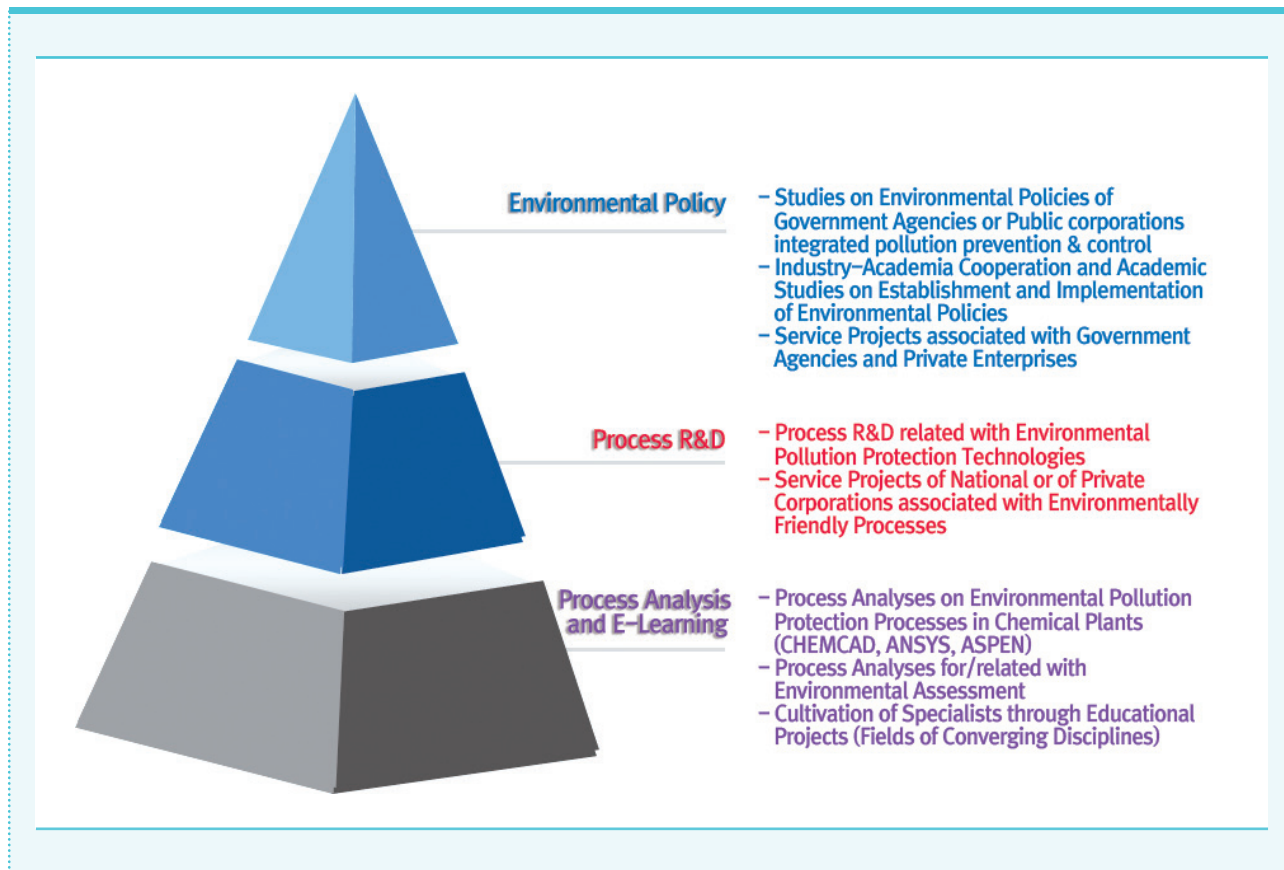
## Current Projects

Recently, concerns about atmospheric environment are increasing. Among diverse kinds of atmospheric pollutants, the NOx is the representative one. The Institute of Environmental Process and Convergence studies the technologies to remove NOx, the technologies generally applicable to industrial factories, automobiles, and residential heating boilers etc. widely. The chief of the institute, professor Yoo Kyung-seun, has contributed to the discipline as an expert on prevention of environmental contamination, and is continuing to explore the ways to industrialize the technologies thereof. As all manufacturing industries are to be under integrated pollution prevention & control laws in 5 years including the approval of business thereof, the institute is focusing its efforts on the establishment of the optimal and best available techniques for the pollutants.





## Overview of Developed Technology



### Patents

- Condensate Drainage Equipment using Thermoelements for Landfills, 10-2014-0039818, March 03, 2014
- SNCR Jet Nozzle(s) Protection Device, 10-2012-0138225, Nov. 03, 2012

### Current Projects

- A Study on Standards on Level of VOC Contents in Paints after 2020, 2016, Ministry of Environment
- A Study Development of Equipment of Improved Energy Consumption Efficiency through Reduced White Lead and Pollutants, 2016, Small and Medium Business Administration
- Studies on the Preparation for K-BREF(Korea BAT Reference) for Industries Manufacturing Purified Petroleum Products, Basic Chemical Substances, and other Chemical Products, 2016, National Institute of Environmental Research
- Development of Optimal Process Technologies for High Concentration Nitric Waste Liquid, 2015, Korea Environmental Industry and Technology Institute
- Establishment of Integrated Control System for Atmospheric Improvement of Capital Region, 20015, EchoLab
- Studies on the Evaluation of 2nd Seoul capital Area Implementation plan, 2014, Ministry of Environment
- Evaluation on Desulfurizing Characteristics of In Bed Desulfurization of Fluidized Bed Boilers, 2014, Hyundai heavy Industries Co., Ltd.

### Publications

- Catalytic Decomposition of N<sub>2</sub>O at Low Temperature by Reduced Cobalt Oxides, 2015, Journal of Nanoscience and Nanotechnology
- Effects of environmental contaminants on the weathering of stone cultural properties in south korea, 2015, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY
- Characteristics of Co-combustion of coal and organic sludges in a 0.1MW pilot-scale circulating fluidized bed boiler, 2014, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY
- Long-term test of SNCR process using enhanced urea solution in a 2 MWe combined heat and power plants, 2014, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY
- A Study on Calculation and Methods to Reduce Greenhouse Gas Emission in Domestic Magnesium Production Process, 2014, The Korean Society of Climate Change Research
- A Study on Distribution of VOC Contents in Marine Paints for Domestic Ships and Contribution thereof to Ozone Creation, 2014, Journal of Korean Society for Atmospheric Environment
- Analyses on Effects of Reduced Contaminants by Low NO<sub>x</sub> Burner and Ways to Promote the Distribution Thereof, 2014, Journal of Environmental Policy and Administration
- Production of Bio Oil by Using Larch Sawdust in a Bubbling Fluidized Bed Reactor, 2013, Energy Sources
- Removal of Cu(II)-ion over amine-functionalized mesoporous silica materials, 2011, Journal of Industrial and Engineering Chemistry
- Thermal degradation of plywood with block polypropylene in TG and batch reactor system, 2011, Journal of Industrial and Engineering Chemistry
- Surfactants as additives for NO<sub>x</sub> reduction during SNCR process with urea solution as reducing agent, 2011, Energy Conversion and Management
- Experiment and CFD simulation of hybrid SNCR-SCR using urea solution in a pilot-scale reactor, 2010, Computers & Chemical Engineering