



Environmental Engineering Research in September 2012

This issue includes 7 papers selected from various fields of environmental engineering regarding wastewater treatment, soil treatment, polychlorinated biphenyls (PCB) removal from waste oil, green algae removal, and particle size analysis for source tracking in a coastal region.

Han et al. [1] reported that their synthesized polyvinyl alcohol/alginate hydrogen beads containing Mg-Al layered double hydroxide (LDH-PVA/alginate beads) significantly improve phosphate removal by two orders of magnitude greater than that of PVA/alginate beads in column experiments. This study may imply significant contribution to phosphorus removal technology. Recently, the Korean government announced stricter discharge water quality standards, especially phosphorus, regarding treatment plants in order to protect surface water from algal bloom. It should again prove interesting to find their follow up researches in the EER shortly. Moon et al. [2] investigated the effects of starvation on floc characteristics when treating saline wastewater using a sequencing batch reactor under both aerobic and non-aerobic conditions. They reported that the non-aerobic starvation of sludge showed a quicker re-start afterward. Reddy et al. [3] reported that *Moringa Oleifera* bark powder can be used as an effective, low cost, and environmentally friendly biosorbent for the removal of Cd(II) and Cu(II) ions from aqueous solution.

Lee and Oa [4] analyzed Pb-contaminated soil at a clay shooting range by the sequential extraction method and found that Pb in the soils existed as an exchangeable form, which could be easily released from the soil by the washing method. They evaluated the characteristics of Pb desorption for remediation of the Pb-contaminated soil using hydrochloric acid (HCl) by the washing method and they reported 65–80% removal efficiency within 10 minutes. Suk et al. [5] reported that a synthetic gas, produced by the pyrolysis of insulating oil containing PCBs, can be used as fuel while PCB concentration can be treated in a high temperature and high pressure reactor.

Lee et al. [6] reported that magnetic powder and chitosan can be used for rapid removal of green algae in water by a strong neodymium magnet.

The editor found that Ahn's paper [7] was particularly interesting. Ahn [7] reported that *in situ* particle size spectra can be a useful means of characterizing particle-associated pollutants for source tracking and environmental interpretation. He evaluated data caused by episodic storm runoff from two sequent cruises. Suspended particles from various sources including surface runoff, near-bed resuspension, and phytoplankton are identified in empirical orthogonal function (EOF) analysis and an entropy-based parameterization (Shannon entropy). He also reported that the integrated observation between the first EOF mode and the Shannon entropy index accentuates the characteristics of two different structures and/or sources of sediment particles.

This summer has demonstrated an increased influence of climate change with elevated temperature and a series of strong typhoons. Severe algal blooms were observed in many parts of surface water including major rivers in Korea. Turbid waters with a high concentration of suspended solids were also observed during and after storms. Algal bloom is an indication of the destruction of the equilibrium in the ecosystem and this is mainly caused by increased nutrients loading such as nitrogen and phosphorus due to human activities. Turbidity in surface water can also be increased if basin areas are not managed properly. As an environmental engineer, these phenomena continue to provide challenges and we must continue to develop wisdom to manage our environment and help sustain it.

We are still waiting from evaluation results of SCIE by Thompson Reuters. The Senior Editor, Ms. Mariana Boletta, of the company replied to our recent evaluation status request that they will complete the evaluation by the end of this year. On the other hand, EER received a letter from EBSCO Industries (<http://www.ebscoind.com/>) that they would list EER in their database. The editorial board of the EER regards this as good news and this can be a positive sign to be listed in SCIE. The EER reshaped the



Editor-in-chief
Dongil Seo

Chungnam National University, Korea
E-mail: seodi@cnu.ac.kr
Tel: +82-42-821-6679 Fax: +82-42-822-5610

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

on-line submission and review system as part of a continuous effort to improve our journal. Constructive comments from members will be greatly appreciated.

As always, on behalf of the board, I appreciate all the support from members of EER either by physical contribution through paper submission, citation, or soundless cheer through continuous interest regarding our activities. Readers are invited to enjoy online copies of EER from our website (eer.or.kr) free of charge, and are also asked to cite our journal as often as possible.

References

1. Han YU, Lee CG, Park JA, Kang JK, Lee I, Kim SB. Immobilization of layered double hydroxide into polyvinyl alcohol/alginic acid hydrogel beads for phosphate removal. *Environ. Eng. Res.* 2012;17:133-138.
2. Moon BH, Park KH, Kim SS, Yoon CH. Effects of aerobic and non-aerobic starvation on SBR performance when treating saline wastewater. *Environ. Eng. Res.* 2012;17:139-144.
3. Reddy DH, Lee SM, Seshiah K. Removal of Cd(II) and Cu(II) from aqueous solution by agro biomass: equilibrium, kinetic and thermodynamics studies. *Environ. Eng. Res.* 2012;17:125-132.
4. Lee Y, Oa SW. Desorption kinetics and removal characteristics of Pb-contaminated soil by the soil washing method: mixing ratios and particle sizes. *Environ. Eng. Res.* 2012;17:145-150.
5. Suk MK, Lee GW, Lee JJ, et al. Thermal destruction of waste insulating oil containing PCBs under high temperature and pressurized conditions. *Environ. Eng. Res.* 2012;17:157-165.
6. Lee H, Suh H, Chang T. Rapid removal of green algae by the magnetic method. *Environ. Eng. Res.* 2012;17:151-156.
7. Ahn JH. Identifying suspended particulate matters in an urban coastal system: significance and application of particle size analysis. *Environ. Eng. Res.* 2012;17:167-174.