

論文 / 著書情報
Article / Book Information

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Category(English)	Doctoral Thesis
種別(和文)	要約
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THESIS OUTLINE

専攻 : Civil and Environmental Engineering 専攻
Department of

学籍番号 : 14D51454
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申請学位 (専攻分野) : 博士 (Philosophy)
Academic Degree Requested Doctor of

指導教員 (主) : YOSHIMURA Chihiro
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Thesis Title	Sustainable Application of Magnetic Carbon Nanotubes to Remove Organic Pollutants from Water
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Thesis Outline

Carbon nanotubes (CNTs) have found diverse applications because of their remarkable mechanical, thermal and electrical properties. This study aimed at the development of sustainable approach to utilize magnetic carbon nanotubes (MCNTs) for removal of organic pollutants (i.e., atrazine and natural organic matter [NOM]), and to regenerate the spent MCNTs using ozone. The inherent magnetic properties of commercial CNTs from different manufacturers were successfully enhanced via a simple approach. The resulting MCNTs showed high magnetic response and high adsorption capacities for tested organic pollutants. Adsorption experiment revealed, for the first time, the selective adsorption of NOM fractions by CNTs. Further, ozone-assisted regeneration was found feasible, facile and efficient. Overall, adsorption of organic pollutants using MCNTs is an efficient, facile and eco-friendly technology.