

**京都大学教育研究振興財団助成事業
成 果 報 告 書**

平成28年10月3日

公益財団法人京都大学教育研究振興財団
会長 辻 井 昭 雄 様

所属部局・研究科 京都大学 工学研究科 都市環境工学専攻

職名・学年 博士課程 2回生

氏 名 Zeng Chenghui

助成の種類	平成28年度・若手研究者在外研究支援・国際研究集会発表助成		
研究集会名	第36回ダイオキシン国際会議 英文: The 36th International Symposium on Halogenated Persistent Organic Pollutants (DIOXIN2016)		
発表題目	和文: 膜処理を用いた微量レベルのペルフルオロヘキサン酸(PFHxA)の除去特性 英文: Removal Efficiency of Trace Level Perfluorohexanoic Acid (PFHxA) by Loose Nanofiltration Membranes at Lab Scale		
開催場所	Congress and Exhibition Center Piazza Adua, 1 Firenze, Italy		
渡航期間	平成28年8月24日～平成28年9月4日		
成果の概要	タイトルは「成果の概要/報告者名」として、A4版2000字程度・和文で作成し、添付して下さい。「成果の概要」以外に添付する資料 <input checked="" type="checkbox"/> 無 <input type="checkbox"/> 有()		
会計報告	交付を受けた助成金額	350,000円	
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	返納すべき助成金額	0円	
	助成金の使途内訳	査証手数料・大阪領事館往復の交通費	12,000円
		京都～関西空港往復の交通費	6,000円
		日当	66,000円
		旅券手数料	151,000円
	宿泊料	80,000円	
	学会参加費	35,000円	
当財団の助成について	(今回の助成に対する感想、今後の助成に望むこと等お書き下さい。助成事業の参考にさせていただきます。) I am really grateful to the financial support provided by the Kyoto University Foundation. As a PhD student, it is very meaningful to me to participate such kind of international conference and I am looking forward to get the financial support again from your foundation. ありがとうございます。		

成果報告書および成果の概要は、財団に郵送(あるいは持参)するとともに、Excel・Wordファイルでメール送信して下さい。メール送信分の印鑑は不要です。

平成 28 年度京都大学教育研究振興財団
国際研究集会発表助成・若手 発表助成報告書

京都大学大学院工学研究科
博士二回生 Zeng Chenghui

Conference : The 36th International Symposium on Halogenated Persistent Organic Pollutants (DIOXIN2016)
Venue : Congress and Exhibition Center Piazza Adua, 1 Firenze, Italy
Duration : August 28th, - September 2nd, 2016

Introduction to DIOXIN 2016 conference

Dioxin 2016 was organized by the International Advisory Board of the International Symposium on Halogenated Persistent Organic Pollutants (POPs), which aimed at promoting scientific education and research on POPs. It provided an open public forum for presentations of cutting-edge scientific research on POPs across all disciplines, including analytical and environmental chemistry, molecular biology, human health, risk assessment, and risk management.

The conference received more than 200 oral presentations as well as over 300 poster presentations related the latest research results in this field of persistent organic pollutants. Participants were from 47 countries. For young researchers, participating this conference was really a good chance to make new relationship with reseachers from other countries. Additionally, interactions among participants sparked a lot of new research ideas, which is very helpful to young researchers to get a deeper understanding in the research field.

Presentation content

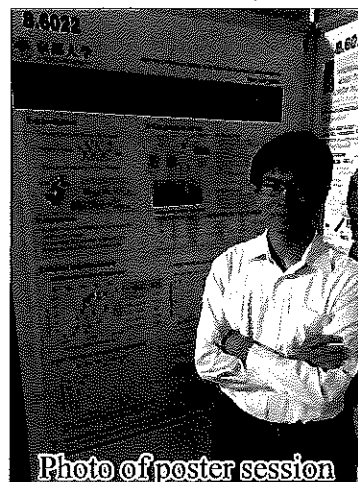
In this conference, I presented a poster on perfluorinated compounds (PFCs) removal by membrane technology. The title of abstract submitted was "Removal Efficiency of Trace Level Perfluorohexanoic Acid (PFHxA) by Loose Nanofiltration Membranes at Lab Scale".

PFHxA is a compound of perfluorinated compounds (PFCs), which have been proved to be toxic, persistent, and bioaccumulative. Recently, PFHxA was found to become the predominant PFCs detected in the river. Drinking water is one of the exposure roots for human being to PFHxA. Thus, it is necessary to remove the PFHxA from drinking water.

In this study, membranes with different molecular weight cut-off (MWCO) were applied to reject the PFHxA in pure water. Two "loose" NF membranes (MWCO: 10,000 Da & 27,000 Da) were found to be able to reject the PFHxA (molecular weight: 314 Da) efficiently. Their rejection rates were 96% and 95%, respectively. Through comparing their characteristics with other membranes', the rejection mechanism of these two membranes was discussed. The results of this study proved that these

“loose” NF membranes could be used in drinking water treatment. To some extent, their application could even be extended to wastewater treatment.

During the poster session, I communicated with researchers from Canada, China and Brazil, etc. To the researcher from Canada, I explained why NF membranes were better option for removing PFHxA from drinking water and he also expressed his worry about PFHxA contamination in drinking water as there is no regulation or legislation on the use of PFHxA currently. To the researcher from Harbin Institute of Technology, China, I shared some knowledge with her about the behavior and fate of PFCs in the wastewater treatment plant as well as in the natural environment. Meanwhile, many other researchers also stop by and read my poster.



What I learned through participating this conference

- International conference is a very good platform to communicate with other researchers as well as a good way to broaden our horizons in the research field.
- Good social work is also quite important for being a good researchers, especially when you want to cooperate with some researchers from other countries.
- The presentation slides must be high-quality, otherwise other people might not be able to understand your research well.

Last but not the least, I would like to express my deepest gratitude to the Kyoto University Foundation for providing financial support to my participation of this international conference.