



OCEESA



CIE-OCEESA Report

Sen Li, Shao-Yuan Leu, Chin-Min Cheng, Jinhui Niu

**Presented at Chinese Institute of Engineers – USA (CIE-USA) Spring Meeting
March 26, 2023**

Introduction



Established in 1980

Became a chapter of CIE-USA in 1988

Initiated first Mainland-Taiwan Environmental Technology Seminar (MTETS) in 1992



~200 global members and 56 Life Members

12 board directors for strategic and program development and decision making

2023 new officers elected in March 2023



Webinars to share environmental science and investigations

Funding support to promote environmental search and improvement

Special event to grow environmental innovation and education

Organize / Participation in National events: AAEOY Host & Co-host: 2007, 2015 & 2022

2023 OCEESA Officers & Board of Directors

2023 OCEESA Officers

- President : Dr. Sen Li 李森
Eastman Chemical Company, Tennessee
- Vice President: Dr. Shao-Yuan Leu 呂紹元
Hong-Kong Polytechnic University, Hong Kong
- Secretary/Treasurer: Dr. Chin-Min Cheng 鄭志民
Leidos
- Ex-Officio and Executive Director: Mr. Jinhui Niu 牛景輝
N2W Engineering, Inc, California

Advisors

- Dr. Jason Jun-Shan Wen 溫俊山
Director of Water Resources, City of Lakewood, California
- Mr. Anmin Liu 劉安民
AML Environmental Engineering Consultant, California
- Dr. Wei-Ping Pan
Western Kentucky University, Kentucky

Board of Directors

- Dr. Heng Dong 董恒
Shanghai, China
- Dr. Weixing Tong 童卫星
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- Dr. Pao-Chi Chen 陳寶祺
Lunghwa University of Science and Technology, Taiwan
- Dr. Wei Li 李偉
South Coast Air Quality Management District
- Dr. Li Cao 曹立
University of Dayton, Ohio
- Ms. Wensi Li
AECOM
- Dr. Jun Han
South Florida Water Management District
- Mr. Xin Song
University of Illinois at Urbana-Champaign



2022-2023 Highlights – Webinar Series



for Overseas Chinese Environmental Engineers & Scientists Association
海外華人環境保護學會環境議題網上論壇(Eighth)

Advanced Circular Recycling Technology from Eastman Chemical Company

February 20, 5:00-6:00 PM PST / February 21, 9:00-10:00 AM 中国标准时间

[About the Speakers]



Kenneth Flint, Market Development Manager in Eastman Chemical's Circular Economy Integration group since January 2020, reshapes Eastman Innovation to anticipate and meet customer and market circular economy and sustainability needs. Since joining Eastman in January 2012, Ken has worked extensively in Eastman's Corporate Innovation function, including serving as a Marketing Leader for its Formulations Platform and as a cross-functional team lead for its Reactive Adhesives program. He is listed as a co-inventor on five patents.

Flint holds an AB in Chemistry from Dartmouth College, and an MM from the J.L. Kellogg Graduate School of Management at Northwestern University. Prior to his work at Eastman, he held a range of business, marketing and strategic management leadership positions in the building materials industry and served as a management consultant with McKinsey & Company, Inc. and in his own business.

[Abstract] Eastman Chemical commitment to sustainability pledges to create A Better Circle through simultaneous initiatives to mitigate climate change, mainstream circularity, and care for society. Join Kenneth Flint, of Eastman's Circular Economy Integration team, as he presents the key components of their Advanced Circular Recycling Technologies, which enable Eastman to utilize hard-to-recycle waste plastic as feedstock for its specialty materials portfolio in plastics, fibers, additives and intermediates. With the technologies already at operating at commercial scale, he will relate current market successes, and review the global growth programs Eastman has underway.

Ecological civilization in Chinese traditional culture – Life of Harmony

June 19th, 6:00-7:00 PM PDT / June 20th, 9:00-10:00 AM 中国标准时间

[About the Speakers]



Sheri Liao (廖晓义), environmental journalist and activist, founder and the director of Beijing Lehe Community Social Service Center, Master of Philosophy, Sun Yat-sen University, Honorary Doctor of Law, Fairfield University. Ms. Liao founded the NGO Global Village of Beijing (GVB) in March 1996 and has initiated a series of environmental projects carried out in the media and through public lectures, media events, workshops, and other outreach activities. Since 2008, she has been to the earthquake-stricken Sichuan provinces, helping the Chinese society to grow by building ecological villages, Lehe academy and cultivating the social workers and talents, and providing social work services for the construction of Lehe Homeland in Chongqing, Hunan, Shandong and Zhejiang.

For her tireless work and efforts, Ms. Liao received numerous awards, such as the Sophie Prize for environment and sustainable development from Norway in 2000, "Green Person of the year award" for environmental achievement by the Joint committee of seven Ministries of China in 2006.

[Abstract] Given the harsh environmental realities in China, Global Village of Beijing (GVB) was established in 1996 as a mechanism through which government, nonprofit organizations and businesses can work together for the environment and to help the public understand its role in this environmental movement. With the mission of promoting citizens' participation in the national strategy of "building a harmonious society and ecological civilization", the center advocates the concept of "building a practices the construction of urban and rural ecological communities featuring Lehe Community, and provides energy and chemical safety services. The new and holistic perspective and way to solve environmental problems nurtured by traditional Chinese culture are to use Eastern wisdom to create an ecological social model that respects heaven and cherishes things and is mutually beneficial.

Coal Mine Drainage as a Potential Source of Rare Earth Elements

October 30, 2022; 6:00-7:00 PM PDT / October 31, 9:00-10:00 AM 中国标准时间



[About the Speaker] John J. Lenhart, Ph.D. is a Professor of Environmental Engineering and Co-Director of the Ohio Water Resources Center at The Ohio State University. He received his Ph.D. in Environmental Science and Engineering from the Colorado School of Mines in 1997. His current research investigates contaminant interactions with interfaces in heterogeneous systems and includes characterizing contaminant coordination to natural and engineered surfaces and the dependence of this coordination state on the structure of the underlying surface. He also studies interactions between particles and surfaces in the environment, such as those that occur with nanoparticles and microplastics. He has authored or co-authored more than 100 publications and is the recipient of an NSF Career Award.

[Abstract] Coal mine drainage (CMD) produced by abandoned and reclaimed coal mines in the Appalachian region of the United States is a significant and chronic environmental and public health issue. The clean-up of these sites is cost prohibitive, and thus there is a need to develop new methods to treat CMD because funds to mitigate the drainage, especially for those discharging from abandoned mines, are limited. Analyses of CMD discharges from abandoned/reclaimed coal mines in Ohio concentrations found rare earth elements (REEs) orders of magnitude higher in CMD than average river water and seawater. This suggests that CMD could serve as a source of REEs and that the sale of the recovered REEs could be used to offset the cost of CMD treatment. This talk will provide an overview of REE presence in coal, coal byproducts, and CMD and describe the potential for these sources to be recovered during CMD treatment.

CO2 Capture Solvent Selection by the Taguchi Method using Bubble Column Scrubbers

December 11, 2022; 6:00-7:00 PM PDT (9:00-10:00PM EST) /
December 12, 2022; 10:00-11:00 AM 中国标准时间



[About the Speaker] Dr. Pao Chi Chen, born in Chiayi, Taiwan, is a professor at the Department of Chemical and Materials Engineering, Lunghwa University of Science and Technology. Professor Chen received a Bachelor Degree in Chemical Engineering from Chung-Yuan University (1978), and an MSc (1980) and an Engineering Doctor's degree (Ph.D.) (1993) in the Department of Chemical Engineering, National Taiwan University. He is a recipient of a research award from the Ministry of Education, Taiwan during 2010-2021. Professor Chen's current research focuses are Nano-structured lipid carriers, capture of carbon dioxide, nanotechnology, and technology education. He served as the Head of the Department (5 years), Dean of Engineering (3 years), and Dean of Student Affairs (2 years). He is also a board member of OCEESA since 2022.

[Abstract] This two-year project aims to use mixed amines to conduct a CO2 absorption test and employ a regeneration scrubbed solution containing CO2. There are five types of mixed amines, namely PZ (piperazine)+MEA (monoethanolamine), PZ+DIPA (diisopropanolamine), PZ+TEA (triethylamine), PZ+AMP (2-amino-2-methyl-1-propanol), and PZ+DETA (diethylenetriamine). In the first year of this study, a continuous bubble-column scrubber was used for testing. The operating variables include the type of mixed amines (A), ratio of mixed amines (B), liquid flow rate (C), gas flow rate (D), concentration of mixed amines (E), and liquid temperature (F), each having five levels. Using Taguchi experimental design, the total number of experiments is $L_{25}(5^6)=25$. The influence of the variables on the absorption efficiency (EF), absorption rate (RA), absorption factor (ϕ), and volumetric overall mass-transfer coefficient (KGa) are explored. The order of importance of parameters and the optimum conditions can be obtained from the Taguchi analysis of the experimental data. The solvent selection was performed according to the Taguchi analysis of the experimental data. A total of fifteen-runs tests showed that the absorption efficiency (EF), absorption rate (RA), absorption factor (ϕ), and volumetric overall mass-transfer coefficient (KGa) were found to be 80-100%, 5.27x10-4-2.02x10-3 mol/L.s, 0.381-1.339 1/s, and 0.0664-3.082 mol-CO2/L.mol-amine, respectively. The 1st year project can be completed by the end of June 2023.

2022-2023 Highlights – Dr. Yang Fund



Overseas Chinese Environmental Engineers & Scientists Association

April 11, 2022

The Overseas Chinese Environmental Engineers & Scientists Association (OCEESA) is pleased to announce that Dr. Jentai Yang and OCEESA has created the "Dr. Jentai Yang Sustainable Environmental Protection and Eco-humanistic Education Fund" (Dr. Yang Fund), administered by a special committee under OCEESA. Dr. Yang Fund will provide grants for qualified projects for synergistic activities focusing on environmental protection and eco-humanistic education in the United States and the greater China area.

Currently, OCEESA is requesting grant applications for subjects related to climate change, renewable energy and new media communication methodology in public awareness of environmental protection and eco-humanistic education for present and next generation professionals for the two-year period of 2022 to 2024. Please see the attached Request for Grant Application (RFGA) for details.

We welcome all qualified applicants to apply for the grants. If you have any questions regarding this RFGA, please feel free to contact Mr. Anmin Liu at anminliu1@gmail.com.

Please visit OCEESA website at www.oceesa.org for future announcement.

Regards,

Jinghui Niu

- Migration and Transformation of Harmful Trace Elements (HTE) in the Process of Recovering Rare Earth Elements (REE) from Coal Fly Ash Activated by NaOH Roasting – Huabei Electric University
- “仁泰育人·生态家庭建设项目” – Beijing LeHe
- CO2 Capture Solvent Selection by the Taguchi Method using Bubble Column Scrubbers - Lunghwa University of Science and Technology, Taiwan
- Coal Mine Drainage as a Potential Source of Rare Earth Elements - Ohio State University, USA

2022-2023 Highlights – AAEOY



全美傑出亞裔工程師 16精英獲表彰

記者丁麗 / 聖荷西市報導

2022年度傑出亞裔工程師獎 (AAEOY) 籌委會與美國中國工程師學會 (CIEUSA) 28日召開新聞發布會，將8月6日在洛杉磯市「洛杉磯機場Marriott酒店」(Los Angeles Airport Marriott) 舉辦2022全美傑出亞裔工程師獎 (AAEOY) 頒獎典禮及論壇。16位得獎人來自美國的科學、工程、技術及學術界，在各自專業領域取得傑出成就，表彰他們對社會及世界文明的重要貢獻。

美國中國工程師學會南加州分會會長，及2022傑出亞裔工程師獎 (AAEOY) 籌委會共同主席王竹青博士，公布得獎名單。16位得獎人包括在太空探索 (NASA) 領導超過2500位科學家工程師、年度預算超過十億美元Ames研究中心資深主管杜龍博士 (Dr. Eugene Tu)，以及領導AMD卓有成效、在CPU處理器研發及精進技術上領先評論的執行資深副總裁 (Dr. Lisa Su) 等。

王竹青指出，2022 AAEOY是一個全年度活動，從上午開始就有各項活動，包括參觀SpaceX和SoFi Stadium運動場，出席波音公司領導力論壇，各大公司管理層主管及專業人才發表專題演講，分享成功經驗和科技界面臨的挑戰。下午有2場研討會，每場講到六位講者，議題包括環境、數據、人工智能、AI、能源、航空科技等。頒獎典禮將於晚上6點開始，得獎人代表致詞。16位得獎人皆為行業精英，今獲人和亞裔驕傲。



2022全美傑出亞裔工程師頒獎發布會，左起為陳和生、謝安瀾、任備、牛慶輝、王竹青、趙自澤、葉衛星、雷俊山。(記者丁麗/攝影)



2022年度傑出亞裔工程師頒獎籌委會共同主席王慶輝 (左) 和王竹青介紹活動事項。(記者丁麗/攝影)

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2023 Plan and Strategy

- Grow membership globally
- Webinar series
- Dr. Yang Award 2023-2025 RFGA
- OCEESA 40-Year Anniversary Celebration

“FORUM OF INTRIGUING ENVIRONMENTAL TECHNOLOGY AND SPECIAL TOPICS OF CARBON CAPTURE, STORAGE, UTILIZATION, CIRCULAR ECNOMAY, CLIMATE CHANGE” (October 19-23, 2023)

Joint Hosts: OCEESA, Lunghwa University of Science and Technology, and Taiwan Institute of Chemical Engineers



OCEESA: Strive on promotion of academic and professional excellence and global networking in environmental science and engineering