

第17回 海洋深層水利用学会 全国大会海洋深層水 2013台湾大会 プログラム
Program of the 17th Annual Meeting of Deep Ocean Water Applications Society

11月2日(土)

November 2nd (Sat.)

I オープニング (Opening Ceremony)

- 9:00 — 9:05 開会挨拶
海洋深層水利用学会会長
高橋 正征 (東京大学名誉教授・高知大学名誉教授)
President of Deep Ocean Water Applications Society
Masayuki Takahashi
(Emeritus professor of the University of Tokyo and Kochi University)
- 9:05 — 9:10 台湾經濟部工業局局長
沈 榮津
Director General of Industrial Development Bureau, MOEA, Taiwan
Jong-Chin Shen
- 9:10 — 9:15 財団法人 石材・資源産業研究発展センター理事長
徐 福榮
President of Stone and Resource Industry R&D Center
Fu-Jong Hsu
- 9:15 — 9:35 来賓の祝辞 ()
- 9:15 — 9:20 花蓮県県長
傅 崐萁
Governor of Hualien County
Kun-Chi Fu
- 9:20 — 9:25 立法委員
王 廷升
Member of The Legislative Yuan, Taiwan
Ting-Son Wang
- 9:25 — 9:30 台湾深層海水発展協会理事長
林 慶明
President of Taiwan Deep Sea Water Development Association
Ching-Ming Lin
- 9:30 — 9:35 国立東華大学学長
吳 茂昆
President of National Dong Hwa University
Maw-Kuen Wu
- 9:35 — 9:40 休憩 (Break time)

II 特別シンポジウム (Special Symposium Session)

- 9:45 — 9:50 司会

大内 一之
(東京大学大学院新領域創成科学研究科・特任研究員)

Chairman

Kazuyuki Ouchi
(Graduate School of Frontier Sciences, The University of Tokyo,
Project Researcher)

- 9 : 50 — 10 : 20 S1. 海洋立國：談台灣海洋產業發展與遠景 60 (2)
黃 煌雄(中華民國監察院 委員)
S1. Ocean Country: The Development and Vision of Taiwanese Marine Industries 61 (3)
Huang-Hsiung Huang (Member of Control Yuan, Taiwan)
- 10 : 20 — 10 : 50 S2. 海洋深層水資源が支える 21 世紀の社会 62 (4)
高橋 正征
(海洋深層水利用学会会長、東京大学・高知大学名誉教授)
S2. Supporting the 21st human society by deep ocean water resources 63 (5)
Masayuki Takahashi
(President of the Deep Ocean Water Applications Society, Emeritus
Professor of the University of Tokyo and Kochi University)
- 10 : 50 — 11 : 20 S3. 海洋深層水産業の将来性 64 (6)
浅川 良住
(マリンゴールド株式会社 代表取締役社長)
S3. Future prospect of deep ocean water industry 65 (7)
Yoshizumi Asakawa
(President of Marine Gold Corporation Ltd.)
- 11 : 20 — 11 : 50 S4. 從土壤礦物質專家到海洋礦物質專家 66 (8)
台肥集團海洋深層水事業之發展與願景
李 復興 (台湾肥料股份有限公司董事長)
S4. A Transition From a Soil Minerals Expert to Ocean Minerals
Expert: The Vision of Taiwan Fertilizer Co., Ltd. for Deep Sea Water
Development 67 (9)
Fu-Hsing Lee
(Chairman of Taiwan Fertilizer Co. Ltd.)
- 11 : 50 — 12 : 20 質疑の部
(Question-and-answer session)
司会：大内 一之/応答者：講演者各位
- 12 : 20 — 13 : 30 昼食(Lunch time)

Ⅲ 一般講演 1 〈海洋・水質関連／生物・水産関連 1〉 69 (11)

Session 1: Water Quality, Biology and Fisheries 1

座長：今田 千秋

(東京海洋大学 大学院 海洋科学技術研究科 教授)

Chairman: Chiaki Imada

(Graduate School of Marine Science and Technology,
Tokyo University of Marine Science and Technology, Professor)

- | | | | | |
|---------|---|---------|---|---------|
| 13 : 30 | — | 13 : 50 | 1. 台灣深層海水長期水質監測
○劉志恆・徐雅玲・陳建宇・黃秉益 (石材資源センター) | 70 (12) |
| | | | 1. Study of long-term water quality monitoring of deep sea water in eastern Taiwan | 71 (13) |
| | | | ○Zhi-Heng Liu, Ya-Ling Hsu, Jian-Yu Chen and Ping-Yi Huang (Stone and Resources Industry R&D Center, Taiwan) | |
| 13 : 50 | — | 14 : 10 | 2. 人工海底山脈の現状と課題
○鈴木達雄 (株式会社 人工海底山脈研究所) | 72 (14) |
| | | | 2. Present status and tasks for artificial under-seamount | 73 (15) |
| | | | ○Tatsuo Suzuki (Artificial Sea-mount Institute) | |
| 14 : 10 | — | 14 : 30 | 3. 探討深層海水對蛹蟲草液態與固態發酵之菌絲體生長及功效成分生成之影響
○洪宇平、李俊霖 (國立臺東大學) | 74 (16) |
| | | | 3. Effects of Deep Seawater on the Mycelia Growth and Functional Ingredients Formation of <i>Cordyceps militaris</i> under Submerged and Solid Fermentation | 75 (17) |
| | | | ○Yu-Ping Hung and Chun-Lin Lee (Department of Life Science, National Taitung University, Taiwan) | |
| 14 : 30 | — | 14 : 50 | 4. 層別定量サンプリングによる相模灘深層の動物プランクトン研究
○田中 祐志 (東京海洋大学大学院海洋科学技術研究科) | 76 (18) |
| | | | 4. Zooplankton study of Sagami Sea deep-water via quantitative stratified sampling | 77 (19) |
| | | | ○Yuji Tanaka (Tokyo University of Marine Science and Technology) | |
| 14 : 50 | — | 15 : 10 | 5. 深層海水培育微藻之油脂特性分析
○林 成原、吳 思賢 (國立臺灣海洋大學) | 78 (20) |
| | | | 5. Analysis of Microalgae Lipid Cultured in Deep Sea Water | 79 (21) |
| | | | ○Cherng-Yuan Lin, Suz-Hsien Wu (Department of Marine Engineering, National Taiwan Ocean University) | |
| 15 : 10 | — | 15 : 20 | 休憩 (Break time) | |

IV 一般講演2 〈海洋・水質関連／生物・水産関連2〉 81 (23)

Session 2: Water Quality, Biology and Fisheries 2

座長：周 宏農

(国立台湾大学漁業科学研究所 教授兼所長)

Chairman: Hong-Nong Chou

(Institute of Fisheries Science, National Taiwan University,
Professor and Director)

- 15 : 20 — 15 : 40 6. DGGE 法による伊豆赤沢海洋深層水中の微生物群集構造解析 82 (24)
 ○山田勝久¹、寺原 猛²、山口貴大²、小林武志²、
 今田千秋² (¹株DHC、²東京海洋大学)
6. Microbial community structures of deep seawater in Izu-Akazawa as revealed by DGGE analysis 83 (25)
 ○Katsuhisa Yamad¹, Takeshi Terahara², Takahiro Yamaguchi²,
 Takeshi Kobayashi² and Chiaki Imada²
 (¹DHC Corporation, ²Tokyo University of Marine Science and Technology)
- 15 : 40 — 16 : 00 7. 以深層海水為培養基可提高本土微藻 *Chlorella sorokiniana* CYI 之生長速率與油脂含量 84 (26)
 ○陳俊延¹、張馨月¹、廖品蓁¹、張嘉修¹、黃秉益²
 (¹國立成功大學、²石資中心)
7. Enhancing microalgal oil/lipids production from *Chlorella sorokiniana* CY1 using deep-seawater as the cultivation medium 85 (27)
 ○Chun-Yen Chen¹, Hsin-Yueh Chang¹, Pin-Chen Liao², Ping-Yi Huang⁴ and Jo-Shu Chang^{1,2,3}
 (¹University Center for Bioscience and Biotechnology, National Cheng Kung University, Taiwan, ²Department of Chemical Engineering, National Cheng Kung University, Taiwan, ³Research Center for Energy Technology and Strategy, National Cheng Kung University, Taiwan, ⁴Water Resources Division, Stone & Resource Industry R&D Center, Taiwan)
- 16 : 00 — 16 : 20 8. 海洋深層水中の微生物の群集組成解析と有用微生物の分離 86 (28)
 ○今田千秋¹、山田勝久²、小林武志¹、寺原 猛¹
 (¹東京海洋大学、²株DHC)
8. Analysis of Microbial Community Structure and Isolation of Beneficial Microorganisms from Deep-sea Water 87 (29)
 ○Chiaki Imada¹, Katsuhisa Yamada², Takeshi Kobayashi¹, Takeshi Terahara¹
 (¹Tokyo University of Marine Science and Technology, ²DHC Corporation)
- 16 : 20 — 16 : 40 9. 探討深層海水對毒源藻類生長及毒素釋放之影響 88 (30)
 ○林怡汝¹、陳睿哲¹、簡世勇¹、黃秉益¹、周宏農²
 (¹石材資源センター、²國立台灣大學)
9. Effects of deep seawater on algal growth and algal toxins release 89 (31)
 ○Yi-Ruu Lin¹, Jui-Che Chen¹, Shi-Yung Chien¹, Ping-Yi Huang¹ and Hong-Nong Chou²
 (¹Stone & Resource Industry R&D Center, Hualien, Taiwan, ²Institute of Fisheries Science, National Taiwan University, Taiwan)
- 16 : 40 — 17 : 00 10. 日本国における沿岸漁業の課題解決のための海洋深層水の利用 90 (32)
 ○山内繁樹、筒井浩之 (株式会社エコニクス)

10. Utilization of deep-ocean water for the solution of coastal fishery problems in Japan 91 (33)
 ○Shigeki Yamaguchi, Hiroyuki Tsutsui (ECONIXE Co. Ltd.)
- 17 : 00 — 17 : 20 11. 利用深層海水培育潔淨餌料生物之可能性 92 (34)
 ○許紘瑜、黃秉益 (石資中心)
11. Prospects for producing clean food organisms for aquaculture using deep sea-water 93 (35)
 ○Hung-Yu Hsu and Ping-Yi Huang
 (Stone and Resource Industry R&D Center, Taiwan)

V 懇親会

- 18 : 00 — (21:00) 遠雄悦来大飯店 2 階宴会ホール
 住所 : 花蓮県寿豊郷塩寮村山嶺 18 号 電話 : :+886-3-8123-999
<http://www.farglory-hotel.com.tw/>

11月3日(日)

November 3rd (Sun)

VI 一般講演3〈農業・畜産関連／健康・医療関連〉 95 (37)

Session 3: Agriculture, Animal husbandry, Health and Medical cares

座長 : 鄭 劍廷

(国立台湾師範大学 生命科学学科 特任教授)

Chairman: Chiang-Ting Chien

(Department of Life Science, National Taiwan Normal University,
 Distinguished Professor)

- 8 : 30 — 8 : 50 12. 探討深層海水對樟芝菌生長及離子吸收之影響 96 (38)
 ○黃鈞鼎、李俊霖 (國立臺東大學)
12. Effects of deep sea water on the growth and ion absorption of *Antrodia camphorate* 97 (39)
 ○Chun-Ting Huang and Chun-Lin Lee
 (Department of Life Science, National Taitung University, Taiwan)
- 8 : 50 — 9 : 10 13. 伊豆赤沢海洋深層水から分離した酵母の酸化ストレス耐性に関する研究 98 (40)
 ○野村道康¹、山田勝久¹、今田千秋²、小林武志²、寺原 猛²
 (1)株DHC、2東京海洋大学)
13. Investigation of the oxidant stress tolerance of the yeast isolated from deep seawater in Izu-Akazawa 99 (41)
 ○M. Nomura¹, K. Yamada¹, C. Imada², T. Kobayashi² and
 T. Terahara²
 (1)DHC Corporation , 2Tokyo University of Marine Science and
 Technology)

- 9 : 10 — 9 : 30
14. 飲用深層海水改善醋酸引起之大鼠十二指腸潰瘍是透過硒所產生之抗氧化與抗凋亡保護機轉 100 (42)
 ○鄭劍廷¹、楊智欽²、黃秉益³、楊芝青⁴
 (¹台灣師範大學、²台大醫院、³石材資源中心、⁴陽明大學)
14. Deep-seawater Intake Improves Acetic Acid-induced Duodenal Ulcer via Selenium's Antioxidant and Anti-apoptotic Action in Rats 101 (43)
 ○Chiang-Ting Chien⁴, Jyh-Chin Yang¹, Ping-Yi Huang² and Chih-Chin Yang³
 (¹Department of Internal Medicine, National Taiwan University Hospital, Taiwan, ²Water Resource Group, Stone and Resource Industry R&D Center, Taiwan, ³Department of Internal Medicine, National Yang-Ming University, Taiwan, ⁴Department of Life Science, National Taiwan Normal University, Taiwan)
- 9 : 30 — 9 : 50
15. 海洋深層水体験施設における長期・継続的な運動浴による健康増進効果の検討 102 (44)
 ○新村哲夫¹、田中朋子¹、金木 潤¹、山腰高子²、松永憲治²、清水忠道²、立瀬剛志³、立浪 勝⁴、升方章人⁵、鏡森定信⁶
 (¹富山県衛生研究所、²富山大学大学院医学薬学研究部皮膚科学、³同・保健医学、⁴富山大学芸術文化、⁵WAVE 滑川、⁶富山産業保健推進連絡事務所)
15. Studies of Health Effects Using Long-Term and Continuous Exercise Bathing in DSW Plant 103 (45)
 ○Tetsuo Shimmura¹, Jun Kanaki¹, Tomoko Tanaka¹, Takako Yamakoshi², Kenji Matsunaga², Tadamichi Shimizu², Takashi Tatsuse³, Masaru Tachinami⁴, Akito Masukawa⁵ and Sadanobu Kagamimori⁶
 (¹Toyama Institute of Health, ²Dept. of Dermatology, ³Dept. of Welfare Promotion and Epidemiology, Graduate School of Medicine and Pharmaceutical Science, University of Toyama, ⁴Faculty of Art and Design, University of Toyama, ⁵Corp. Wave Namerikawa, ⁶Toyama Occupational Health Liaison Office)
- 9 : 50 — 10 : 10
16. 深層水細菌の生理活性化化合物とその利用に向けた進展 104 (46)
 ○榎本恵一 (高知工科大学 環境理工学群)
16. Bioactive compounds of bacteria isolated from deep ocean water and the recent progress for their utilization 105 (47)
 ○Keiichi Enomoto (Kochi University of Technology)
- 10 : 10 — 10 : 30
17. 海洋深層水飲用による腫瘍細胞増殖抑制効果の関与蛋白解明 106 (48)
 ○端口佳宏¹、中川光司¹、池上良成¹、竹内啓晃²、杉浦哲朗²
 (¹赤穂化成株式会社、²高知大学 医学部)
17. Elucidation of proteins involved in tumor growth suppression induced by drinking Refined Deep-Seawater 107 (49)
 ○Yoshihiro Hataguchi¹, Kouji Nagawa¹, Yoshinari Ikegami¹,

Hiroaki Takeuchi², Tetsuro Sugiura²

(¹Ako Kasei Co., Ltd.,²Kochi Medical School)

10 : 30 — 10 : 40 休憩(Break time)

Ⅶ 一般講演 4 〈利活用システム関連他 1〉

109 (51)

Session 4: Resource Applications 1

座長：山田 勝久

(株式会社 ディーエイチシー 海洋深層水研究所 所長、
博士(海洋科学) 東京海洋大学共同研究員)

Chairman: Katsuhisa Yamada

(Director of Department of research in the deep seawater,DHC
corporation, Ph. D., Joint research member in Tokyo University
of Marine Science and Technology)

- 10 : 40 — 11 : 00 18. 日本の海洋深層水の調査研究テーマの変遷と利活用の課題 110 (52)
○長野 章¹、伊藤 敏朗²、武下 久恵²
(¹(一社)全日本漁港建設協会、²水産庁防災漁村課)
18. Changing research themes and future applications of deep sea water 111 (53)
○Akira Nagano¹,Toshiro Ito²,Hisae Takesita²
(¹All Japan Fishing Port Construction Association,²Fishery
Agency, Ministry of Agriculture, Forestry and Fisheries)
- 11 : 00 — 11 : 20 19. 富山湾深層水を活用した商品開発の大学における事例 112 (54)
○葭田隆治¹、古米 保¹、中曾修一²、柴 達義²
(¹富山県深層水協議会顧問、²株新湊かまぼこ)
19. New Goods Produced by Using Deep Sea Water in Toyama Bay 113 (55)
○Yoshida Ryuji¹, T. Furumai¹, S. Nakaso² and T. Shiba²
(¹Advisor, Deep Sea Water Association in Toyama Prefecture and
²Shinminato Kamaboco Co., Ltd., Japan)
- 11 : 20 — 11 : 40 20. 臺東大學深層海水産業産學合作建構之展望 114 (56)
○劉焜錫¹、劉金源¹、陳小琪¹、段文宏¹、陳雲芳¹、馮千
芝¹、李俊霖¹、陳芝融¹、陳孟炬¹、楊春桂¹、張禎祐²、
王文清³、徐享崑³(¹臺東大學、²臺東專科學校、³能高休閒
育樂公司)
20. Prospects for University-Industry Collaborations Between the Deep
Sea Water Industry and National Taitung University 115 (57)
○Chiung-His Liu¹,Wen-Ching Wang²,Jin-Yuan Liu¹, Shiang-Kueen
Hsu²,Hsiao-Chi Chen¹,Wen-Hung Twan¹, Yun-Fang Chen¹,Chien-
Chih Feng¹, Chun-Lin Lee¹, Chen-Yu Chang³, Chiy-Rong Chen¹,
Meng-Chu Chen¹,Chun-Kuei Yang¹,
(¹National Taitung University,²Neng-Gao Entertainment Corporation,
³National Taitung College)
- 11 : 40 — 12 : 00 21. 利用奈過濾系統製備高鈣鎂比與脫硫之深層海水礦物質液 116 (58)
○黃育楓、駱呈欣、詹張灝、黃秉益 (石材資源中心)

		21. Removing sulfate ions from deep seawater through a multi-step membrane filtration process	117 (59)
		○Yu-Fong Huang , Cheng-Shing Lo, Chang-Hao Cheng and Ping-Yi Huang (Stone and Resource Industry R&D Center, Taiwan)	
12 : 00	— 12 : 05	休憩 (Break time)	

Ⅷ 一般講演 5 〈利活用システム関連他 2〉 119 (61)

Session 5: Resource Applications 2

座長：李士畦

(工業技術研究院 特別補佐)

Chairman: Shih-Chi Lee

(Industrial Technology Research Institute, Center Executive Assistant)

12 : 05	— 12 : 20	22. Hardness Water Production From Deep Seawater By RO/NF/ED Linking Process	120 (62)
		○Deok-Soo Moon, Kwang Soo Kim, Ho Ji, Mi Yeon Choi, Hyun Ji Jung and Hyeon-Ju Kim (Deep Ocean Water Application Center, Korea Institute of Ocean Science & Technology)	
12 : 20	— 12 : 35	23. Design and experiment of 20kW Ocean Thermal Energy Conversion pilot plant	121 (63)
		○Ho-Saeng Lee, Sang-Wong Cha, Young-Seok Kim, Ji-Hoon Son, Hyeon-Ju Kim (Deep Ocean Water Application Center, Korea Institute of Ocean Science & Technology)	
12 : 35	— 12 : 50	24. Establishment of Blue Infrastructure using Seawater Resource in Coastal areas	122 (64)
		○Hyeon-Ju Kim, Ho-Saeng Lee, Deok-Su Moon and Wee-Yeong Oh (Deep Ocean Water Application Center, Korea Institute of Ocean Science & Technology, Goseong-gun, Korea)	
12 : 50	— 13 : 05	25. The effect of feed temperature on permeate flux during membrane separation	123 (65)
		○K. S. Kim, D. S. Moon, H. J. Kim, S. W. Lee, H. Ji, H. J. Jung, H. J. Won (Deep Ocean Water Application Center, Korea Institute of Ocean Science & Technology)	

Ⅸ 閉会挨拶 (Closing Remarks)

13 : 05 — 13 : 10

海洋深層水利用学会副会長

深見 公雄 (国立大学法人高知大学 理事)

Vice-president of the Deep Ocean Water Applications Society

Kimio Fukami (Director and Vice-president of Kochi University)

13 : 10 — 14 : 00 昼食(Lunchtime)

■ 見学会(Excursion tour)

14 : 00 — 17 : 20

14 : 00 —	東華大學集合出発
14 : 50 — 16 : 00	台湾肥料施設見学
16 : 00 — 17 : 20	移動・光隆生技施設見学
17 : 20 —	花蓮駅・主要ホテル送迎

11月4日(月)

November 4th (Mon)

■ 見学会(Excursion tour)

8 : 00 — 17 : 00

08 : 00 —	各ホテルより順次出発
10 : 00 — 10 : 15	途中休憩
12 : 00 — 13 : 30	食事
13 : 30 — 15 : 10	移動・經濟部水利署施設見学
15 : 10 — 16 : 30	移動・水産試験所施設見学
16 : 50 —	台東駅・台東空港送迎

<Poster presentations>	125 (67)
P1. Distribution of water masses and variation of nutrients in the coastal areas of Gangwon Province of the Korean East Sea from 2008 to 2012	126 (68)
○Mi-Yun Choi, Deok-Su Moon, Hyeon-Ji Jung, Young-Suk Kim and Hyeon-Ju Kim (Deep Ocean Water Application Center, Korea Institute of Ocean Science & Technology)	
P2. 発芽体集塊化法による深層水コンブ生産の事業化	127 (69)
○平岡雅規 ¹ 、蜂谷 潤 ² (¹ 高知大学、 ² 一般社団法人うみ路)	
P2. Kombu (<i>Saccharina japonica</i>) commercial production using deep seawater and germling cluster method	128 (70)
○Masanori Hiraoka ¹ , Jun Hachiya ² (¹ Kochi University, ² General Incorporated Association Umiji)	
P3. 陸地及海洋微生物應用於永續能源開發之評估研究	129 (71)
○陳博彥 ¹ 、洪俊明 ² 、吳意洵 ³ 、王裕民 ¹ 、劉士琦 ¹ 、林冰 ² 、倪超 ³ ¹ 國立宜蘭大學化學工程與材料學系, 台灣 ² 華僑大學化學工程學院, 中國 ³ 廈門大學化學與化工學院 化學工程與生化工程學系, 中國	
P3. Exploring characteristics of land-based and marine microbes for sustainable energy Applications	130 (72)
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