Information of 2022 OQUANOUS Plus OEP Lectures & Professors

17 March，Thursday

China and Malaysia 13:00-14:20

Japan and Korea 14:00-15:20

Thailand and Indonesia 12:00-13:20

Name of Professor: Yutaka Haga

Photo of Professor:

Introduction of Professor：

Dr. Yutaka Haga is an Associate Professor, Tokyo University of Marine Science and Technology, Japan. He obtained a Ph.D. degree from Tokyo University of Fisheries, Japan in 2002. He worked for University of Maryland and Kindai University as a postdoctoral fellow. His research focused on development of sustainable fish feed using microalgae, insect meal, etc as well as better understanding of metabolism of nutrients such as LC-PUFA and taurine. The goal of his study is to obtain important insights for manipulating metabolic ability of food fish to enrich health benefit nutrients for humans. He advised for more than 42 master and 8 Ph. D course students and co-authored more than 200 presentations, published 5 book chapters and more than 73 papers on peer-reviewed journals such as Aquaculture, Aquaculture Nutrition, etc. He is an editorial board member of Fisheries Science and Aquaculture Science. He was invited for nine international scientific meetings held in Brazil, Portugal, Belgium, US, Czech, Malaysia, Mexico, and Chile.

Subject: Department of Marine Biosciences

Title: Developing sustainable aquafeed for future

Content (abstract):

Since global aquaculture production has been increasing but capture fisheries production has not increased, global seafood production depends on aquaculture, and this trend will continue. Since aquatic animals require more dietary protein than land

animals, higher protein sources are formulated in aquafeed. Fish meal is the major protein source for traditional aquafeed. However, the natural resources of the forage fish, which is used for fish meal, are limited, and it is not possible to extend fishmeal production. Therefore, replacement of marine derived ingredients with terrestrial plant products in aquafeed is considered as a promising approach to support sustainable development of the aquaculture industry. Plant protein sources such as soybean meal and corn gluten meal are often used to replace fishmeal in aquafeed. However, amino acid imbalance, deficiency of some essential nutrients such as n-3 long chain polyunsaturated fatty acid (LC-PUFA), and taurine, etc, as well as inclusion of antinutritional factors in plant protein sources limit use of the plant ingredients. Among the limitations, one of the key issues in future aquafeed is how to solve the problem of limited availability of fishmeal and fish oil. Microalgae have been extensively studied as potential oil sources for aquafeed. However, not many studies demonstrated the usefulness of algae oil for marine fish species. In my lecture, I will introduce the recent trend of replacing fishmeal and fish oil in aquafeed and explain why we need to replace fishmeal and fish oil to ensure sustainability of the aquaculture industry.

Feeding trials were conducted to determine the effect of replacing fish oil by docosahexaenoic acid (DHA) rich algae Schizochytrium sp. meal on growth performance of juvenile red sea bream Pagrus major. Inthe 1st trial, fish were fed non-fishmeal diet with fish oil or 10% algal meal. In the 2nd trial, fish were fed non-fishmeal diet with fish oil and 5, 10, and 15% algal meal. In the two trials, no growth retardation were observed in fish fed non-fishmeal diet with algal meal than that fed fish oil diet. DHA content was significantly higher in fish fed fish oil and algal meal diets than that of the negative control in the two trials. It was suggested that 5-10% algal meal inclusion was sufficient for non-fishmeal diet for red sea bream since similar growth was observed in fish fed non-fishmeal diet formulated with 5-15% algal meal. These results clearly demonstrated that microalgae is a promising candidate to supply n-3 LC-PUFA for red sea bream. Recently, algae meal was also tested for juvenile yellowtail Seriola quinqueradiata to replace fish oil. I will introduce the results of the feeding trials with other important nutrients such as taurine in aquafeed.

Target Students： Third and fourth year undergraduates, and Master’s degree students

17 March，Thursday

China and Malaysia 14:30-15:50
Japanand Korea 15:30-16:50
Thailandand Indonesia 13:30-14:50

Name of Professor: Jiasong Fang

Photo of Professor:

Introduction of Professor：
Prof. Jiasong Fang is a Chair Professor and Director of Shanghai Engineering Research Center for Hadal Science & Technology, Shanghai Ocean University. He is also Editor-in-Chief of Deep-sea Research I. Prof. Fang received his Ph.D. in oceanography from Texas A&M University. He is the chief scientist of the National Key R&D Program of China. He has broad research interests in deep-sea pizophilic microbes, marine carbon cycle and biogeochemistry. He proposed a new marine carbon cycle model "PDPMC", and has published more than 120 papers. He was awarded "Outstanding Researcher" from NASA, ASEE(American Society of Engineering Education), and USRA(Universities Space Research Association). He is the recipient of the 2021 Shanghai Magnolia Memorial Award and two national key talent programs form the Chinese central government.

Subject: Marine Science

Title: Exploring the hadal zone, the last great frontier of ocean science and technology

Content (abstract): The hadal trenches constitute the so-called hadal biosphere because of their unique tectonics, topography, bathymetry, and microbiology. Despite their remoteness, the trenches exhibited unexpected high microbial diversity and activities in both the water column and sediment. Previous studies have provided insight into the microbial components and processes in hadal trenches. However, there is an apparent gap in our understanding of the connections among the various components and processes in the hadal biosphere. This lecture will present the most recent seminar discoveries in hadal science and technological advances in hadal technology.

Target Students： Senior undergraduate students and graduate students

17 March，Thursday

China and Malaysia 16:00-16:40
Japan and Korea 17:00-17:40
Thailand and Indonesia 15:00-15:40

Name of Professor: Yonghwa Oh

Photo of Professor:

Introduction of Professor：
1. Education
- 2016.08 Ph.D. Environmental & Marine Biogeochemistry Laboratory, Seoul National University
- 2009.02 B.S. Earth System Science, Seoul National University
2. Employment
- 2021.03-present Assistant Prof. Ocean Science and Technology School, Korea Maritime & Ocean University
- 2021.02 Postdoc Korea institute of Geoscience and Mineral Resources
- 2016.12 Postdoc Environmental & Marine Biogeochemistry Laboratory, Seoul National University
3. Areas of interest
- Biogeochemical cycles in coastal and open oceans
- Applications of radionuclides in various environments
- Earthquake prediction
- Seawater-freshwater interaction.

Subject: Environmental Science

Title: Applications of natural tracers in terrestrial and marine environments

Content (abstract):
- Submarine groundwater discharge (SGD) in the coastal zones
- Earthquake prediction using radon isotopes
- Groundwater input in various environments

Target Students: Senior undergraduate students and graduate students

17 March，Thursday

China and Malaysia 16:40-17:20
Japan and Korea 17:40-18:20
Thailand and Indonesia 15:40-16:20

Name of Professor: Hyeong-Seog Kim

Photo of Professor:

Introduction of Professor：
Prof. Hyeong-Seog Kim has been a professor in the Department of Convergence Study on Ocean Science and Technology at Korea Maritime and Ocean University (KMOU) since 2013. Before joining KMOU, he served as the post-doctoral researcher at Princeton University and NOAA's Geophysical Fluid Dynamics Laboratory. He received his Ph.D. in atmospheric science from Seoul National University
The current research area of Prof. Kim is climate extreme. Specifically, he is conducting research on climatic variability in extreme weather events such as tropical cyclone, heat wave and cold surge.

Subject: Tropical Cyclone and Climate Change

Title: Tropical cyclone activity related climate change

Content (abstract):
This lecture will provide an overview of tropical cyclone activity over the western North Pacific related climate variability and change.

Target Students： 4th year undergraduate and MSc/PhD students.

18 March，Friday

China and Malaysia 09:30-10:10

Japan and Korea 10:30-11:10

Thailand and Indonesia 08:30-9:10

Name of Professor: Cheol Huh

Photo of Professor:

Introduction of Professor：

Prof. Cheol Huh has been a professor in the Department of Convergence Study on Ocean Science and Technology at Korea Maritime and Ocean University (KMOU) since 2014. Before joining KMOU, he served as the principal researcher at Korea Research Institute of Ships and Ocean Engineering (KRISO) for 8 years. He received his Ph.D. in mechanical engineering from Pohang University of Science and Technology (POSTECH).

The current research area of Prof. Huh is ocean energy and environment. Specifically, he is conducting researches on Offshore Carbon Capture and Storage (CCS), Hydrogen and Ammonia Energy Process, and Marine Pollution Reduction Technology.

Subject: Ocean Energy and Environment

Title: How can we reduce greenhouse gas emissions and use clean energy in the ocean?

Content (abstract):

This lecture will provide an overview of Offshore Carbon Captureand Storage (CCS), Hydrogen and Ammonia Energy Process, and Marine Pollution Reduction Technology.

Target Students： 4th year undergraduate and MSc/PhD students.

18 March，Friday

China and Malaysia 10:10-10:50

Japan and Korea 11:10-11:50

Thailand and Indonesia 09:10-09:50

Name of Professor: Inho Yang

Photo of Professor:

Introduction of Professor： Prof. Inho Yang's research interests focus on bioactive natural products from marine organisms. Mostly from marine Actinomycetes. This study includes 1) Chemical structure elucidation 2) Isolation and identification of marine microorganisms

Subject: Marine Natural Products

Title: Natural products from marine sources

Content (abstract):
This class would introduce the basic concept of marine natural products and the research flow of my lab

Target Students: MS and PhD course students

18 March，Friday

China and Malaysia 11:00-12:20
Japanand Korea 12:00-13:20
Thailandand Indonesia 10:00-11:20

Name of Professor: Daisuke Watanabe

Photo of Professor:

Introduction of Professor: Prof. Daisuke Watanabe's research areas: Social Infrastructure (Civil Engineering, Architecture, Disaster Prevention) / Social systems engineering

Subject: Department of Logistics and Information Engineering

Title: Sustainable Maritime Transport

Content (abstract):
Transport is the second biggest greenhouse gas (GHG) emission sector, following electric power sector. Maritime transport is the least greenhouse gas and air pollutant emitting mode of transport in ton-kilo base compared to rail, road and air freight. However, over 90 % of international trade depends on maritime transport in Japan. Therefore, Japan is contributing to international actions to address climate change while ensuring the sustainable growth of maritime transport. In this lecture, we will cover the current status of carbon-free actions and environmental analysis in maritime transport.

Target Students: Third- and fourth-year undergraduates, and master's degree students

18 March，Friday

China and Malaysia 13:00-14:20
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Name of Professor: Jun Zou

Photo of Professor:

Introduction of Professor:
Prof. Jun Zou has more than 30 years of teaching and research experience in fish health and disease. He has published more than 150 papers which have been cited for >11,000 times. He was employed in University of Aberdeen from 1992 to 2017 and taught courses related to aquaculture. He currently serves as the associate editor of Fish and Shellfish Immunology and is a member of editorial board of several international journals including Developmental and Comparative Immunology, Aquaculture and Fisheries.

Subject: Sustainable aquaculture-Fish health and disease

Title: Dealing with fish disease

Content (abstract):
This lecture provides an overview on the health and disease issues in aquaculture. It is structured into fish defense system, fish diseases, vaccines and disease control measures.

Target Students: 4th year undergraduate and MSc/PhD students.

18 March，Friday

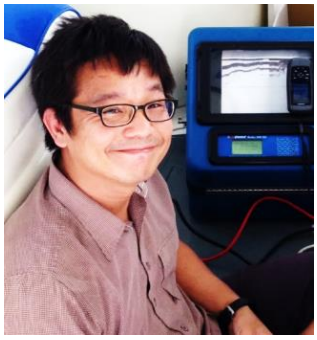
China and Malaysia 14:30-15:50

Japan and Korea 15:30-16:50

Thailand and Indonesia 13:30-14:50

Name of Professor: Tanuspong Pokavanich

Photo of Professor:



Introduction of Professor: Dr. Tanuspong Pokavanich is the Lecturer/Assistant Dean for Research, Department of Marine Science, Faculty of Fisheries, Kasetsart University, Thailand. Field of interest is oceanography, field investigation and numerical modeling physical and biogeochemical aquatic processes.

Subject: Oceanography

Title: Introduction to oceanographic and marine environmental research

Content (abstract):

- Beginning of the earth and ocean
- Marine environmental processes
- Example of recent issues in marine environment, i.e., global warming, sea level rise, ocean acidification, blue economy, blue carbon, IPCC reports, etc.

Target Students: Students in any background who have interest in oceanography and marine environment.