Title of Research:

12_PT04-02-2

Development of Ecosystem Risk Impact Assessment System Methods for Chemicals using Microcosm Systems

Principal Investigator:

Yuhei INAMORI (Foundation for Advancement of International Science (FAIS))
3-24-16 Kasuga, Tsukuba, Ibaraki 305-0821 Japan
(tel) 029-860-3333 (e-mail) y_inamori@fais.or.jp

Collaborators:

Kazuhito MURAKAMI (Chiba Institute of Technology)
2-17-1 Tsudanuma, Narashino, Chiba 275-0016 Japan
(tel)047-478-0455 (e-mail) kaz_murakami@sky.it-chiba.ac.jp
Takashi AMEMIYA (Yokohama National University)
79-1 Tokiwadai, Hodogaya-ku, Yokohama, Kanagawa 240-8501 Japan
(tel) 045-339-4353 (e-mail) amemiyat@ynu.ac.jp
Ken-ichi SHIBATA (Yokohama National University, Toyo University)
79-1 Tokiwadai, Hodogaya-ku, Yokohama, Kanagawa 240-8501 Japan
(tel) 0276-82-9337 (e-mail) shibata091@toyo.jp
Ryuhei INAMORI (Foundation for Advancement of International Science)
(tel) 029-860-3333 (e-mail) r_inamori@fais.or.jp
Katsura SUGIURA (Sagami Women's University), Kunihiko KAKAZU, Yuuki KANZO (Foundation for Advancement of International Science), Saki AGATSUMA (Chiba Institute of Technology)

Summary of Research:

In this research, research and development in the environmental impact risk assessment of a chemical substance was conducted paying attention to microcosm system which is an aquatic model ecosystem which consists of a producer (phytoplankton), a predator (zooplankton), and a decomposer (bacteria). The enactment as international guideline as OECD test of the general-purpose microcosm test method from Japan was aimed at by making the P/R (quantity of production/respiration) ratio which can indicate the change of the whole ecosystem into an assessment index. Although the environmental impact risk assessment examination of a chemical substance has been conventionally carried out using a single species creature, as for the model ecosystem examination which imitated the nature, the general-purpose standard test method has not been established by problems, such as stability, reproducibility and high cost. In addition, the fundamental manual concerning test operation has been already established (Funds for the Overall Promotion of Environmental Research -Ministry of Environment in FY2009-2011), and the ring test etc. which carried out the test between several research institutions for wide use, are planned to carry out to establish as the OECD standard test method.

Timeline: 2013.11.1. - 2015.2.28.

Topics:

3rd New LRI Research Report Meeting: "Development of Ecosystem Risk Impact Assessment System Methods for Chemicals using Microcosm Systems"

Publications:

Yuhei Inamoro, Kazuhito Murakami, Kunihiko Kakazu, Ryuhei Inamoro, Yuuki Kanzo, Ken-ichi Shibata, Takashi Amemiya Katsura Sugiura : "Development of Environmental Impact Risk Assessment Method using Microcosm for OECD Standard Test", *20th Symposium on Japan Society of Environmental Toxicology in Toyama* (2014.9)