Form B-2
(FY2022)
Must be typed

Date（日付）
21/6/22 （Date/Month/Year: 日/月/年）

Activity Report -Science Dialogue Program-
（サイエンス・ダイアログ事業 実施報告書）

- Fellow's name（講師氏名）: LEE Ying Ping （ID No.P21388 ）

- Name and title of the lecture assistant（講義補助者の職・氏名）
TOYOSHIMA Eita

- Participating school（学校名）: Chiba Prefectural Yakuendai High School

- Date （実施日時）: 17/6/22 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
Effect of dissolved organic matter properties on iron redox kinetics in natural and effluent waters

- Lecture format（講義形式）:
◆☒Onsite ・ □Online (Please choose one.)（□対面 ・ □オンライン（どちらか選択ください。））
◆Lecture time（講義時間） 25 min（分）, Q&A time（質疑応答時間） 0 min（分）
◆Lecture style（ex.: used projector, conducted experiments）
（講義方法（例:プロジェクター使用による講義、実験・実習の有無など））
15 min group discussion followed by 10 min open discussion

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.

Importance of Fe as an essential nutrient for microorganisms is well recognized such as cellular respiration, photosynthesis and nitrogen fixation. However, the extremely low solubility of thermodynamically stable Fe(III) in oxygenated and circumneutral pH natural waters resulted in low concentration of dissolved Fe in some coastal and oceanic seawaters. The bioavailability of Fe in natural waters can be affected by concentration of dissolved Fe and its redox kinetics, given that Fe(II) has much higher solubility and thus higher bioavailability than Fe(III) does. In the river-coastal dynamic system, changes in land cover, salinity gradients, types of riverine input or organic matter, and seasonal changes may affect to the Fe oxidation kinetics as the Fe(II) oxidation is affected by water qualities such as pH and organic matter. The Fe(II) oxidation kinetics in the river-coastal system in order to grasp the seasonal and spatial scales of Fe bioavailability between two different aquatic environments were presented. In addition, current work on introducing new method to measure the Fe(III) complexation and by exploring the relationship between redox kinetics and complexation will provide a more comprehensive understanding of Fe biogeochemistry structures.