

(For JSPS Fellow)

Form B-5

Date (日付)

13/02/2015 (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): Nadeem Ahmad (ID No. P14759)

- Participating school (学校名): Shizuoka Kita High School

- Date (実施日時) : 29 January 2015  
(Date/Month/Year:日/月/年)

- Lecture title (講演題目): (in English) Vertical Dense Jets in a Marine Environment  
(in Japanese)

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Brine is a dense salty water produced during various industrialized and mining processes. Typical sources of brine are desalination, solution mining of salt domes, mining of oil and potash, and various industrialized processes. There are many authentic studies showing that brine discharge into sea water is harmful for marine life. Mixing zone concept is commonly used for disposal of brine into sea. Mixing zone is an area surrounding the discharge point where concentration of brine is above acceptable level of concentration for marine life. Mixing zone concept is an economic strategy but at the cost of deteriorating marine ecosystem. Mixing zone concept is not applicable in sensitive areas. In my research I proposed a concept of minimum return point dilution to control the brine just at the discharge point. I simulated the brine discharge phenomenon of fields in a laboratory by discharging salty water vertically upward into a tank filled with freshwater. I found that dilution is minimum just at the discharge point when the discharge returns back to the level of the discharge nozzle. Minimum return point dilution concept could be used in environmentally sensitive areas where large mixing zones are not applicable due to sensitivity of areas.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 2 min (分), Q&A time (質疑応答時間) 5 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Mostly used projector and sometime used board. An experiment was conducted at end of the lecture and students also participated

- ◆ Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Interpretation by Dr. Suzuki who was accompanied with me in lecture.

- ◆ Name and title of accompanied person (同行者 職・氏名)

Takayuki Suzuki, Associate professor

- ◆ Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):

**His impression and opinios were good about lecture.**