

(For JSPS Fellow)

Form B-5

Date (日付)

18/03/2017 (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): Dr. M Nuruzzaman Khan Hira (ID No. P16343)

- Participating school (学校名): Meizan High School, Fukuoka

- Date (実施日時): 13/03/2017 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (In English) SELF ASSEMBLY AS A TOOL OF NANOSTRUCTURING
(In Japanese) ナノ構造のツールとしての自己組織化

- Name and title of your accompanied person (同行者 職・氏名)
Yoshida Kyohei , Post doctoral researcher at Kumamoto University

- Lecture format (講演形式): Powerpoint and blackboard

◆Lecture time (講演時間) 100 min (分), Q&A time (質疑応答時間) 15 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))

Used projector and used blackboard for drawing figures, schematic diagram, used molecular model etc

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

I delivered a lecture called "Self assembly as a tool of nanostructuring" in English. The aim of the lecture was to teach the students about nanochemistry. They learned some novel approach used by scientists for fabrication of special 2D and 3D nanomaterials employing macromolecular array, self assemble monolayers on solid surface and patterning of Biomolecules such as DNA. Lecture had four parts. (1) Background on researcher's country of origin (Bangladesh: culture, language, tourist attraction places, education systems, foods, population, history, geography, etc.). (2) Introduction to science and engineering; short biography of researcher with research interest. (3) Researcher's past research: These part cover the following topics- synthesis of biodegradable polymer (polyethylene), fabrication of natural fiber composites, preparation of bioscaffold for bone tissue repair. Then the lectured followed by the topics Self-assembly of molecules. It includes the special architecture of single strand DNA on solid surface and detail mechanism of self-assembly process. This part was aided with several demonstrations on blackboard and some movie files from PowerPoint. Students were shown 3D model of DNA structure and shown the mechanism of DNA hybridization. Finally, some developed and published single strand DNA 3D patterns and several 3D nanostructured polymers were shown.

Students were taught the detail aspect of nanomaterial synthesis in lab with reference to the special nanomaterial prepared in our lab. 4) Researcher's current research in Japan: At this point, students were taught about special project of chiral carbon nanostructuring in lab. The topics include carbon nanotube, special applications. Synthesis route of carbon nanomaterials soft electronics and some prepared materials in our lab.

Students and the staff showed great interest in the presentation. They feel very deep interest in nanochemistry. A letter (note of appreciation) from school staff is included at the end of the report. It appeared that most of the students were very shy and subsequently get interested in lecture and ask some basic and interesting questions during the lecture. However, after the lecture many of the students lined up to ask specific questions individually.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

I students are very shy to ask questions. So more explanations, diagram, movie files, experiments will add advantage in delivering presentation.

- Other noteworthy information (その他特筆すべき事項):

I prepared a glossary of terms used in the presentation in English, and had them translated to Japanese.

- Impressions and opinions from a company (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。)