

(For JSPS Fellow)

Form B-5

Date (日付) 21/11/2017

(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): HOSSAIN MD. FARUK (ID No. P16372)
- Participating school (学校名): Gifu Kamo Senior High School
- Date (実施日時): 16/11/2017 c (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): Fabrication of Nanostructured ZnO Thin Films for the Application of Perovskite Solar Cells
- Name and title of your company (同行者 職・氏名)
Department of Electric and Electronic Engineering, University of Toyama, Gofuku, Japan
- Lecture format (講演形式):
 - ◆Lecture time (講演時間) 60 min (分), Q&A time (質疑応答時間) 20 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))
Lecture was arranged by powerpoint presentation with multimedia projector.

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

The lecture of science dialogue has been divided into three parts. The first part is an introduction to my home country (Bangladesh). Historical background of Bangladesh is explained shortly. The population, area, culture, weather, and tourist places of Bangladesh are also discussed. In the second part, I am trying to mention the main reasons for becoming a scientist. I also discuss my educational and professional experiences. Finally, I have explained the importance and themes of my research work. In my doctoral study, I was fabricated dye-sensitized solar cells (DSCs). Recently, I am working on the solid-state DSCs for recovering drawbacks of previously prepared-DSCs. The perovskite solar cell (PeSC) is one of the promising solid-state DSCs. The PeSC has attracted remarkable attention in photovoltaic research during recent years due to its high efficiency, easier fabrication process, and low material cost. The zinc oxide (ZnO) thin film has been deposited on indium-doped tin oxide (ITO) substrate by hydrothermal method. The perovskite is deposited on ZnO/ITO substrate by the spin-coating method in glove-box (N₂-environment). The Spiro-MeOTAD and gold (Au) are used as a hole transporting material and a back-contact electrode, respectively. The structural, optical, surface-morphological properties have been investigated and correlated with their photovoltaic performance of PeSCs.

Must be typed

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

Time is very short to give them a clear concept of my country and research.

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

- I also found the students very shy to participate in the Q&A session. I told them please ask me in Japanese. If they prepared for questions before the presentation day, then it is better.

- 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。)

I appreciate such opportunity and encourage future JSPS fellows to participate in this program.