

(For JSPS Fellow)

Form B-5

Date (日付) 15/10/2016

(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): ANANDHA BABU GOVINDAN (ID No. P14356)
- Participating school (学校名): Aichi Prefectural Kariya High School (Kariya-city, Aichi)
- Date (実施日時): 14/10/2016 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) Crystalline Silicon Solar Cells and Piezoelectric crystals
(in Japanese)
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The lecture started with a brief introduction about myself and where I come from, an introduction to my country (India) and some important historical places in India. My research area is Multicrystalline Silicon Solar cells so I explained what scientist studies in this area. I explained about solar energy, its importance, Band diagram of Conductor, Semiconductor or Insulator, What is a Photovoltaic Cell, Types of Solar Cells, Monocrystalline Si vs Multicrystalline Si, How to make p-type and n-type semiconductor, Working principle of Solar cell, Growth of Silicon crystals by Czochralski method, Float Zone method and Directional Solidification (DS) method. I gave reasons for why solar cells are made of silicon, Why do solar cells use semiconductors only , Why is Silicon Black & Shiny, How do solar cells work, How to grow Si single crystals, Production of multicrystalline Si wafers, How Si solar panels are made, How do cooking lighter work and How does piezoelectric energy harvesting work. I concluded the talk how to fabricate Silicon solar cell and challenges in multicrystalline silicon based solar cell technology and challenges in piezoelectric devices. I showed facilities like DS system, MBE, phosphorus diffusion furnace, SEM, Minority carrier life time measurement system, PL Imaging system, PXR and solar simulator.

- Language used (使用言語): English
- Lecture format (講演形式):
 - ◆Lecture time (講演時間) 90 min (分), Q&A time (質疑応答時間) 30 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))

Projector, Samples like Si chunks, Si single crystal, Multicrystalline Si and Si solar cells

Have shown to students

◆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))

Japanese explanation by accompanied person

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

Mr.Suhara Takamichi, M2 Student

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

Mr.Suhara Takamichi participated extensively in the question and Answer session to encourage the students to participate which greatly improved the atmosphere in the classroom.

- 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。):

Mr.Suhara Takamichi impressed my presentation. He interacted with students. High school students have very good opportunities to interact with me. Students informed to Mr.Suhara Takamichi like "very interesting presentation".