

平成25年11月16日

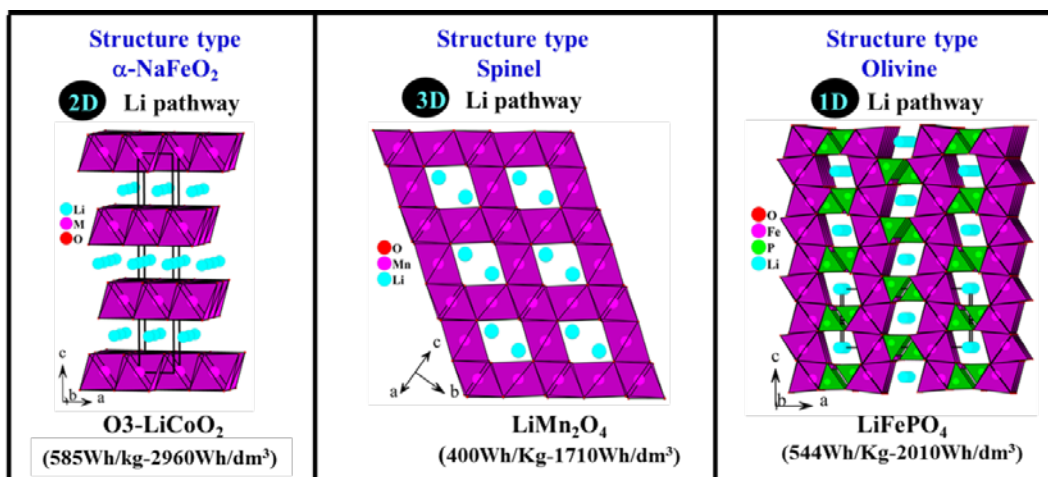
## サイエンス・ダイアログ 実施報告書

1. 学校名・担当者氏名: 佐賀県立致遠館高等学校・尊田和寿
2. 講師氏名: Hamdi BEN YAHIA
3. 同行者氏名: なし
4. 実施日時: 平成 25 年 11 月 16 日 (土) 10:00~12:00
5. 参加生徒: 2年生 33人  
備考: 理数科・普通科理系の生徒
6. 講演題目: Importance of crystallography in Material science

## 7. 講演概要:

Crystallography is the science that examines the arrangement of atoms in solids. The use of X-ray crystallography has allowed us to study the chemical bonds which draw one atom to another. By tuning the chemical composition of a material, it is possible to modify its structure and thus change its properties and behavior.

Crystallography has been intensively used for the characterization of materials implemented in lithium ion batteries (LIB). Below a 3D-presentation of the crystal structures of the most used positive electrode materials in LIB.



In their Battery Research Group (AIST-KANSAI), they were focusing on the improvement of the performances of the  $\text{LiCoO}_2$  material. Beside that, they were looking for new materials with higher safety, lower cost, and longer cycle life. During the last two years they had been working on the  $\text{Li}_{2-x}\text{Na}_x\text{M}[\text{PO}_4]\text{F}$  ( $M = \text{Mn, Fe, Co, Ni, and Mg}$ ) family of compounds and they were happy to share their results with Chienkan High School students.

8. 使用言語: 英語

9. 講演形式:

(1) 講演時間 100 分      質疑応答時間 20 分

(2) 講演方法 電子黒板による講演

(3) 通訳 なし

(4) 事前学習時使用教材(事前学習を行った場合のみ)

講師からの概要プリント・キーワードの確認

10. 学校からの支給経費(該当がある場合): なし

11. その他特筆すべき事項: なし