

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

Author: Dr. Kikuko Miyata
Nagoya University, Japan, kikuko.miyata@gmail.com

Dr. Keisuke Tamura
Japan, tamura@u.phys.nagoya-u.ac.jp
Prof. Hidetaka Tanaka
Nagoya University, Japan, htanaka@isee.nagoya-u.ac.jp
Prof. Hidehiro Kaneda
Nagoya University, Japan, kaneda@u.phys.nagoya-u.ac.jp
Prof. Hiroyasu Tajima
Nagoya University, Japan, tajima@isee.nagoya-u.ac.jp
Mr. ChubuSat Instrument Development Project
Nagoya University, Japan, chubusat.mtg@gmail.com

REPORT ON 7-YEARS' EXPERIENCE OF SATELLITE INSTRUMENT DEVELOPMENT PROJECT
COURSE

Abstract

Nagoya University organized Leadership Development Program for Space Exploration and Research from FY2012 to FY2018. The program is a five-year education program for doctoral course students aimed to develop international leaders with a broad foundation and the ability to spearhead the expansion of space utilization and related industries. This paper reports the results of the part of the program related to the satellite instrument development course called "ChubuSat Instrument Development Project". The course enabled students to learn the actual experience in satellite development and testing related to the satellite project. More than 100 people had experience of the course during the 7-years program. Projects are carried out by teams of 5–9 students from different academic fields: both in engineering and science. The course consists of three phases. In the first phase called mission proposal phase, students make a proposal for a satellite project over six months. In the second phase called the instrument development phase, they can select a course from the following options. 1) Prototyping and testing of onboard instruments to examine the feasibility of the proposed project. 2) Detailed design and verification course to gain the experience for the real instrument development including various environmental tests. The third phase called Flight-Model Fabrication Phase, highly feasible satellite onboard instruments selected from the first phase is developed. The interview results having at the end of the course show most of all students satisfied with the course. They cultivated planning, organizational management, and problem-solving skills. In addition, they exchanged their experience and background between disciplines. Moreover, a real satellite project began based on the proposal in this course. In this way, the same educational program has been executed continuously for multi-disciplinary students. The authors believe that these long-term continues course reports help the related educational program establishment or modification in future.