

# PREFACE

This annual report reviews the research activities of the Laboratory of Advanced Science and Technology for Industry (LASTI) in the academic year of 2013 (April 2013 –March 2014) including activities using a 1.5GeV synchrotron radiation facility “NewSUBARU” and compact 15-MeV linac "LEENA" at the site of SPring-8. Other research activities of the micro and nanoscale carried out energetically at CAST building.

Topics of the NewSUBARU research activities of this year are as follows.

- (1) Five beamlines were upgraded for advanced research and industrial application. Upgraded beamlines are BL05, BL07A & B, BL09, BL10 and BL11. For example, there have been improvements in the beamline control system and an upgrade of spectrometer in the industrial analysis beamline BL05. A large EUV mirror reflectivity meter was installed on BL10. One of the LIGA beamlines, BL11, was remodeled for advanced industrial manufacturing.
- (2) A micro coherent scatterometry system was developed for phase defect inspection of the EUVL masks. A microprocessing using laser produced plasma was demonstrated. Nano-micro group developed a dihedral corner reflector array for floating image system.

All NewSUBARU beamlines are open for industry use. Promotion of both use and technical assistances industrial users is supported by MEXT's "Project for Creation of Research Platforms and Sharing of Advanced Research Infrastructure. "



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