

## Prof. Yamada has been granted 2013 JST-SENTAN (Development of System and Technology for Advanced Measurement and Analysis) Program.

Prof. Yamada has been granted 2013 JST-SENTAN Program for technology development type. He will be the principle investigator for the project entitled “Development of next-generation NMR spectrometer for measurement of all atoms in the periodic table”.

Afterwards, Mr. Hirokuni Taguchi, Director of Research, and He have spoken with Mr. Hiroshi Wakiguchi, the President, regarding this grant-in aid. The president has praised his achievement with the aim of the further success.

This program consists of three different types; technology development, system development and practical realization type. It supports creative research and development of system and technologies for advanced measurement and analysis in response to the Nation’s need.

### 【Research Objective】

Development of next-generation NMR spectrometer for measurement of all atoms in the periodic table

### 【Principal Investigator】

Prof. Kazuhiko Yamada  
Specially Appointed Lecturer  
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### 【Research Abstract】

In this work, we develop a highly-sensitive field-swept nuclear magnetic resonance (NMR) system combined with optomechanics and high-temperature superconducting coils, which can potentially measure all atoms in the periodic table. By using this next-generation NMR spectrometer, the signal strength will be able to increase more than 100 times compared to those of conventional Fourier Transform NMR devices. Moreover, there will be no limitations of NMR accessible nuclei. More importantly, it can be applied to research fields where NMR methods have not been used for a long time, such as materials and inorganic chemical science, medical field, and so on.



Prof. Yamada (middle) and Director Taguchi (left) speak to President Wakiguchi (right) at the office of the president



(left to right) Director Taguchi, Prof. Yamada, President Wakiguchi