

## Kinken Wakate: "11th Materials Science School for Young Scientists Fundamentals and Modern Aspects of Superconductivity"

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Kinken Wakate was held on 29th September 2014 at Institute for Materials Research. This year four professors provided lectures on superconductivity from both of theoretical and experimental points of view. In short talk session, several participants gave presentation on their projects and enjoyed fruitful discussion with senior professors.

Superconductivity is one of most fascinating topics in condensed matter physics. Huge amount of researches on the superconductivity have been accumulated since the discovery in Mercury about a hundred years ago. The KINKEN WAKATE school was organized to give young students and scientists a great opportunity to learn fundamentals and modern aspects of superconductivity. Four world-famous professors were invited and gave lectures on superconductivity. Over 40 students and scientists participated the school and learned wide variety of topics in superconductivity.

The lecture started from Prof. Shin-ichi Uchida's lecture "Road to Higher T<sub>c</sub>" and he explained key parameters for the high-T<sub>c</sub> superconductivity in copper oxides and iron compounds. Prof. Martin Greven gave a lecture "Neutron Scattering Studies and the Phase Diagram of the Cuprate High-Temperature Superconductors" and reviewed the rich phase diagram of cuprate



Fig. 2 Group photo.

high-T<sub>c</sub> superconductors obtained mainly from neutron scattering technique. Prof. Yasutomo. J. Uemura gave the lecture "Muon Spin Relaxation Studies of Unconventional Superconductors" and discussed the pairing mechanism of various unconventional superconductors from view of superconducting symmetry. Finally, Prof. Oleg P. Sushkov gave the lecture "Magnon Mediated Superconducting Pairing in a Very Lightly Doped Two Dimensional Mott Insulator" and talked theoretical description of pairing mechanisms in strongly-correlated electron systems. Throughout the lecture questions and answers were exchanged actively. In short talk session, several participants gave a contributed presentation on their research. Senior scientists kindly made constructive suggestions and comments on their talks. They enjoyed the fruitful discussion overrunning the scheduled time. The school was concluded in great success.



Fig. 1 A scene of the lecture.