

Curriculum Vitae

Dr. Yugo Oshima

National High Magnetic Field Laboratory,
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Academic degrees

Ph. D. in Physics, Kobe University, Japan 2003.
Dissertation: *Fermi Surface Study of Organic Conductors by Magneto-optical Measurements.*
Advisor: Prof. Hitoshi Ohta

Master in Physics, Kobe University, Japan 2000.
Thesis: *Cyclotron Resonance Study of BEDT-TTF Organic Conductors.*
Advisor: Prof. Hitoshi Ohta

Bachelor in Physics, Kobe University, Japan 1998.

Appointments

May 2003-present
Postdoctoral Research Assoc., National High Magnetic Field Laboratory,
Tallahassee, Florida, USA.

Apr. 2003-May 2003
Technical Assistant, Kobe University, Faculty of Science, Kobe, Hyogo,
Japan.

Other Academic Position

Research assistant, Winter 2001
The Graduate School of Science and Technology, Kobe University
-Assisted the project for the research on photonics materials by ESR measurements

Teaching assistant, 1998-2001
Department of Physics, Faculty of Science, Kobe University
-Assisted the experiments for graduate students

Research Interests

Primarily, millimeter and sub-millimeter wave spectroscopy of low-dimensional organic conducting, superconducting and magnetic systems in high magnetic fields, by employing various magneto-optical resonance techniques such as cyclotron resonance, periodic orbit resonance and electron spin resonance (ESR). Also - development of the near-field ESR spectroscopy instrumentation.

Languages

- Fluent in Japanese, French and English
- Can read some German and Chinese

Computational Skills

- Using mainly Macintosh OS, but can use also Windows or Unix OS
- Experience in writing some programs in C, Objective C, BASIC languages
- Can make some applications by using LabVIEW, REALbasic etc.
- Can make Web sites using HTML, Java-script languages

For further information : <http://hugonet.infoseek.ne.jp>

Research Activities

19 articles in refereed journals and books; 10 presentations at the international meetings and 12 oral presentations at the national meetings. The following list highlights 3 recent publications.

Fermi surface study of quasi-one-dimensional metals using magneto-optical techniques, Y. Oshima, M. Kimata, K. Kishigi, H. Ohta, K. Koyama, M. Motokawa, H. Nishikawa, K. Kikuchi and I. Ikemoto, Phys. Rev. B **68** (2003) 054526-054530.

Observation of high order harmonic resonances in magneto-optical measurements of (BEDT-TTF)₂Br(DIA), Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. M. Yamamoto and R. Kato, J. Phys. Soc. Jpn. **71** (2002) 1031-1034.

Fermi surface study of quasi-two-dimensional organic conductors by magneto-optical measurements, Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. M. Yamamoto, R. Kato, M. Tamura, Y. Nishio and K. Kajita, J. Phys. Soc. Jpn. **72** (2003) 143-148.

List of Publications (Complete List) in chronological order

1. "Cyclotron resonance study of θ -(BEDT-TTF)₂I₃", Y. Oshima, N. Nakagawa, K. Akioka, H. Ohta, S. Okubo, M. Tamura, Y. Nishio and K. Kajita, Synthetic Metals **103** (1999) 1919-1920.
2. "Circularly polarized cyclotron resonance measurement system and its application to BEDT-TTF salts", H. Ohta, Y. Oshima, N. Nakagawa, K. Akioka, S. Okubo and K. Kanoda, Synthetic Metals **103** (1999) 1913.
3. "Fermi surface study of θ -(BEDT-TTF)₂I₃ by cyclotron resonance measurements", Y. Oshima, H. Ohta, S. Okubo, K. Koyama, M. Motokawa, M. Tamura, Y. Nishio and K. Kajita, Synthetic Metals **120** (2000) 853-854.
4. "High-field magneto-optical measurements of BEDT-TTF salts", Y. Oshima, H. Ohta, S. Okubo, K. Koyama, M. Motokawa, M. Tamura, Y. Nishio and K. Kajita, Physica B **294-295** (2001) 431-434.
5. "Observation of direct transition in S=1/2 quantum spin system Cu₂(C₅N₁₂N₂)₂Cl₄ by

high field ESR", H. Ohta, Y. Oshima, T. Sakurai, S. Okubo, T. Tanaka, K. Koyama, M. Motokawa, H. Kikuchi, H. Nagasawa and J. P. Boucher, *J. Magnetism and Magnetic Materials* **226-230** (2001) 439-440.

6. "Magnetism of C_{60} -based molecular complexes: High field magnetization and magneto-optical study", S. V. Demishev, N. E. Sluchanko, L. Weckhuysen, V. V. Moshchalkov, H. Ohta, S. Okubo, Y. Oshima and N. G. Spitsina, *Physics of the Solid State* **44** (2002) 425.

7. "Magneto-optical measurements of BEDT-TTF salts containing supramolecular assemblies", Y. Oshima, H. Ohta, H. M. Yamamoto, R. Kato, K. Koyama and M. Motokawa, *Synthetic Metals* **133-134** (2003) 453-454.

8. "High field ESR and magneto-optical measurements in millimeter and submillimeter wave regions", H. Ohta, S. Okubo, Y. Oshima, T. Sakurai, M. Saruhashi, Y. Uwatoko, K. Koyama, M. Motokawa, H. M. Yamamoto and R. Kato, *Proceedings of IRMMW (Toulouse 2001)* 4-27, p257-262.

9. "ESR studies of BEDT-TTF organic conductors containing supramolecular assemblies", Y. Oshima, H. Ohta, H. M. Yamamoto and R. Kato, *EPR in the 21st century: Basics and Applications to Material, Life and Earth Sciences*, A. Kawamori, J. Yamauchi and H. Ohta eds., (Elsevier Science B.V., 2002), p.312-315.

10. "EPR evidence of onset of the quantum critical point in $CuGeO_3:Fe$ ", S.V. Demishev, R.V. Bunting, H. Ohta, S. Okubo, Y. Oshima and N.E. Sluchanko, *EPR in the 21st century: Basics and Applications to Material, Life and Earth Sciences*, A. Kawamori, J. Yamauchi and H. Ohta eds., (Elsevier Science B.V., 2002), p.741-746.

11. "Observation of high order harmonic resonances in magneto-optical measurements of $(BEDT-TTF)_2Br(DIA)$ ", Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. M. Yamamoto and R. Kato, *J. Phys. Soc. Jpn.* **71** (2002) 1031-1034.

12. "Magneto-optical measurements of $\beta-(BEDT-TTF)_2AuI_2$ ", H. Ohta, Y. Oshima, Y. Inagaki, S. Okubo, M. Kimata, K. Koyama, M. Motokawa and T. Mori, *Synth. Met.* **135-136** (2003) 527-528.

13. "Magneto-optical measurements of quasi-one-dimensional conductor $(DMET)_2I_3$ ", Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. Nishikawa, K. Kikuchi and I. Ikemoto, *Synth. Met.* **135-136** (2003) 531-532.

14. "Magnetic properties of the fullerene organic compounds in strong magnetic fields", N. Spitsina, S. Demishev, H. Ohta, S. Okubo, Y. Oshima and L. Weckhuysen, *Polyhedron* **22** (2003) 2009-2012.

15. "Quantum critical point in $CuGeO_3$ doped with magnetic impurities", S.V. Demishev, Y. Inagaki, M.M. Markina, H. Ohta, S. Okubo, Y. Oshima, A.A. Pronin, N.E. Sluchanko,

N.A. Samarin and V.V. Glushkov, *Physica B* **329-333** (2003) 715-716.

16. "Fermi surface study of quasi-two-dimensional organic conductors by magneto-optical measurements", Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. M. Yamamoto, R. Kato, M. Tamura, Y. Nishio and K. Kajita, *J. Phys. Soc. Jpn.* **72** (2003) 143-148.

17. "Anomalous temperature dependence of the ESR linewidth in CuGeO₃ doped with magnetic impurities and universal relations in the Oshikawa-Affleck theory", S.V. Demishev, Y. Inagaki, H. Ohta, S. Okubo, Y. Oshima, A.A. Pronin, N.A. Samarin, A.V. Semeno and N.E. Sluchanko, *Europhys. Lett.* **63** (2003) 446-452.

18. "Fermi surface study of quasi-one-dimensional metals using magneto-optical techniques", Y. Oshima, M. Kimata, K. Kishigi, H. Ohta, K. Koyama, M. Motokawa, H. Nishikawa, K. Kikuchi and I. Ikemoto, *Phys. Rev. B* **68** (2003) 054526-054530.

19. "Electric and thermoelectric transport probes of metal-insulator and two-band magnetotransport behavior in graphite", T. Tokumoto, E. Jobiliong, E.S. Choi, Y. Oshima and J.S. Brooks, *Solid State Commun.* **129** (2004) 599-604.

International Conference Presentations

1. *Cyclotron resonance study of θ -(BEDT-TTF)₂I₃*, Y. Oshima, N. Nakagawa, K. Akioka, H. Ohta, S. Okubo, M. Tamura, Y. Nishio, K. Kajita, International Conference on Science and Technology of Synthetic Metals (ICSM98), Montpellier, France, July 1998.

2. *Circularly polarized cyclotron resonance measurement system and its application to BEDT-TTF salts*, H. Ohta, Y. Oshima, N. Nakagawa, K. Akioka, S. Okubo, K. Kanoda, International Conference on Science and Technology of Synthetic Metals (ICSM98), Montpellier, France, July 1998.

3. *Cyclotron resonance measurement of BEDT-TTF salt under high magnetic field*, H. Ohta, Y. Oshima, S. Okubo, K. Akioka, K. Kanoda, Eighth International Conference on Megagauss Magnetic Field Generation and Related Topics (Megagauss VIII), Tallahassee, Florida USA, October 1998.

4. *ESR measurements of Mott insulator of κ -(BEDT-TTF d₈)₂Cu[N(CN)₂]Br*, Y. Oshima, H. Ohta, S. Okubo, K. Kanoda, 22nd International Conference on Low Temperature Physics (LT22), Helsinki, Finland, August 1999.

5. *Fermi surface study of θ -(BEDT-TTF)₂I₃ by cyclotron resonance measurements*, Y. Oshima, H. Ohta, S. Okubo, K. Koyama, M. Motokawa, M. Tamura, Y. Nishio, K. Kajita, International Conference on Science and Technology of Synthetic Metals (ICSM2000), Badgastein, Austria, July 2000.

6. *High-field magneto-optical measurements of BEDT-TTF salts*, Y. Oshima, H. Ohta, S. Okubo, K. Koyama, M. Motokawa, M. Tamura, Y. Nishio, K. Kajita, 6th International Symposium on Research in High Magnetic Fields (RHMF 2000), Porto, Portugal, August 2000.

7. *Magneto-optical measurements of BEDT-TTF salts containing supramolecular assemblies*, Y. Oshima, H. Ohta, H. M. Yamamoto, R. Kato, K. Koyama, M. Motokawa, The 4th International Symposium on Crystalline Organic Metals, Superconductors and Ferromagnets (ISCOM 2001), Rusutsu, Japan, September 2001.

8. *ESR studies of BEDT-TTF organic conductors containing supramolecular assemblies*, Y. Oshima, H. Ohta, H. M. Yamamoto, R. Kato, The 3rd Asia-Pacific EPR/ESR Symposium (APES 2001), Kobe, Japan, October 2001.

9. *Magneto-optical measurements of quasi-one-dimensional conductor $(DMET)_2I_3$* , Y. Oshima, H. Ohta, K. Koyama, M. Motokawa, H. Nishikawa, K. Kikuchi, I. Ikemoto, International Conference on Science and Technology of Synthetic Metals (ICSM2002), Shanghai, China, June 2002.

10. *Observation of high-order quasi-one-dimensional periodic orbit resonance in $(DMET)_2I_3$ and its Fermi surface*, Y. Oshima, M. Kimata, K. Kishigi, H. Ohta, K. Koyama, M. Motokawa, H. Nishikawa, K. Kikuchi, I. Ikemoto, 7th International Symposium on Research in High Magnetic Fields (RHMF 2003), Toulouse, France, July 2003.

For further information:

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References (Please contact)

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