

Curriculum Vitae of Riichiro Saito

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Personal Information:

Name: Riichiro Saito
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Representative publications

Books:

1. “Physical Properties of Carbon Nanotubes” R. Saito, M. S. Dresselhaus, and G. Dresselhaus, Imperial College Press, UK, (1998)
(citation index = 9,383 by Google Scholar)
2. “Raman spectroscopy in graphene related systems” A. Jorio, M. S. Dresselhaus, R. Saito, G. Dresselhaus, Wiley-VCH, Germany (2011)
(citation index = 540 by Google Scholar)
3. “Quantum Physics” in Japanese, R. Saito, Baihuukan Pub. Co., (1993)
4. “Science of Fullerene, Nanotube, and Graphene” in Japanese, R. Saito, Kyoritsu Pub. Co. (2015)
5. “Basic Solid State Physics” in Japanese, R. Saito, Asakura Pub. Co., (2009)

6. "Introduction and Application of Carbon Nanotubes", in Japanese, Eds. R. Saito and H. Shinohara, Baihuukan Pub. Co., (2004)

Papers: C. I. = Citation Index taken by Web of Science

1. M. S. Dresselhaus et al., Phys. Rep. 409, 47 (2005) C. I. = 2,440.
2. R. Saito et al., "Electronic structure of chiral graphene tubules", Appl. Phys. Lett. 60,2204 (1992), C.I. = 2,089.
3. M. A. Pimenta et al., Phys. Chem. Chem. Phys. 9, 1276 (2007) C. I. = 1,925.
4. M. S. Dresselhaus et al., Nano Lett. 10, 751 (2010) C. I. = 1,364.
5. A. Jorio et al., Phys. Rev. Lett. 86, 1118 (2001), C. I. = 1,163.
6. R. Saito et al., "Electronic structures of carbon fibers based on C₆₀", Phys. Rev. B46, 1804 (1992) C.I. = 1,058.
7. M. S. Dresselhaus et al., Carbon, 40 2043 (2002) C. I. = 1,052.

Statistics: (including in-press articles)

Books:	39
Papers:	316
Invited Talks:	211
Presentation in meetings:	815
The h-index for R. Saito:	78
Sum of the Times Cited :	29,584
Average Citation per Article:	94.22
No of paper which have a C.I. more than 100:	59

Awards/Prize

1. Japan IBM prize (1999.12).
2. Hsun Lee Joint Research Awards (2006.10).
3. The Japan Carbon Award for Innovative Research (2008.7.17).
4. The Japanese Society of Microscopy Award for the Scientific Paper (Materials) (2009.5.28).
5. International Union of Material Research Society (IUMRS) Somiya Award (2009.9.22).
6. Japan Physical Society Journal Award (2014.3.29)
7. Japan Society of Applied Physics Paper Award (2017.9.5)

Educational and Carrier history:

The University of Tokyo,
Department of Physics, Faculty of Science
(Undergraduate) 1976.4-1980.3
(Graduate Course) 1980.4-1985.3 got Dr. Sci.
(Research Associate) 1985.4-1990.3
The University of Electro-Communications
Department of Electronics Engineering
(Associate Professor) 1990.4-2003.2
Tohoku University
Department of Physics, Graduate School of Science
(Professor) 2003.3-

The following is the visiting professors for research.

The University of Tokyo,
Meson Science Laboratory, Faculty of Science
(Visiting Associate Professor) 1989.8-1991.9
Massachusetts Institute of Technology,
Department of Physics,
(Visiting Scientist) 1991.10-1992.7
The University of Tokyo,
Department of Physics, Faculty of Science
(Visiting Associate Professor) 1994.7-1995.3
The University of Tokyo,
Institute of Solid State Physics,
(Visiting Associate Professor) 1997.10-1998.3
Shanghai University,
(Visiting Professor) 2009.10-2012.10
Toho University,
(Visiting Professor) 2015.4-2016.3

List of Works

updated June 11, 2018

I Books (Some are written in Japanese)

1. R. Saito, T. Ohno and H. Kamimura: Orbital susceptibility of graphite intercalation compounds, in “Graphite Intercalation Compounds”, eds. S. Tanuma and H. Kamimura, pp. 147-156, World Scientific Publishing Co., Singapore, (1985).
2. H. Kamimura, S. Matsuno, and R. Saito: Spin-polaron pairing mechanism in the high T_c copper oxides, in “Mechanisms of High Temperature Superconductivity”, eds. H. Kamimura and A. Oshiyama, Springer Series in Material Science 11, pp. 8-19, Springer-Verlag, Heidelberg, (1989).
3. M. S. Dresselhaus, G. Dresselhaus, R. Saito, and P. C. Eklund: C_{60} -related balls and Fibers, in “Elementary Excitations in Solids”, eds. J. L. Birman and C. Sébenne and R. F. Wallis, pp. 387-417, Elsevier Science Publishers, B.V., (1992).
4. M. S. Dresselhaus, G. Dresselhaus, and R. Saito: Superconducting properties of fullerenes, in “Physical Properties of High Temperature Superconductors IV”, ed. D. M. Ginsberg, pp. 471-564, World Scientific Publishing Co., Singapore, (1994).
5. 齋藤 理一郎: 「量子物理学」, 電子工学初歩シリーズ (山下 栄吉、安永均編)、No.7, 単著 (172 頁), 培風館, (1995).
6. M. S. Dresselhaus, G. Dresselhaus, P. C. Eklund, R. Saito, and M. Endo: Introduction to carbon materials, in “Carbon Nanotubes”, ed. T. Ebbesen, Chapter I, pp. 1-33, CRC Press, Inc., Florida, USA, (1996).
7. M. Endo, R. Saito, M. S. Dresselhaus, and G. Dresselhaus: From carbon fibers to nanotube, in “Carbon Nanotubes”, ed. T. Ebbesen, Chapter II, pp. 35-110, CRC Press, Inc., Florida, USA, (1996).

8. M. S. Dresselhaus, R. Saito: Nanostructure in “The 1998 McGraw-Hill Yearbook of Science & Technology” , ed. S. P. Parker, pp. 263-265, McGraw-Hill Book. Co., (1997).
9. R. Saito, M. S. Dresselhaus, and G. Dresselhaus: ““Physical Properties of Carbon Nanotubes””, pp. 1-258, Imperial College Press, UK, (1998).
10. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Phonon Structure and Raman Effect of Single-Wall Carbon Nanotubes in “Science and Technology of Carbon Nanotube”, eds. K. Tanaka, T. Yamabe, and K. Fukui, Chapter 6, pp. 51-62, Elsevier Science Ltd, Oxford, UK , (1999).
11. M. S. Dresselhaus, G. Dresselhaus, P. C. Eklund and R. Saito: Electrons and Phonons in Fullerenes and Carbon Nanotubes in “Optical and Electronic Properties of Fullerenes and Fullerene-Based Materials”, eds. J. Shinar, Z. V. Vardeny and Z. H. Kafafi, chapter 8, pp. 217-260, Marcel Dekker, Inc, New York, (2000).
12. G. Dresselhaus, M. A. Pimenta, R. Saito, J.-C. Charlier, S. D. M. Brown, P. Corio, A. Marucci, and M. S. Dresselhaus: On the $\pi - \pi$ overlap energy in carbon nanotubes in “Science and Applications of Nanotubes”, eds. D. Tománek and R. J. Enbody, pp. 275–295, Kluwer Academic, New York, (2000).
13. M. S. Dresselhaus, G. Dresselhaus, and R. Saito: “Electronic Band Structure of Graphites” in “Graphite and Precursors”, ed. Pierre Delhaès, Vol. 1, pp.25-43, Gordon and Breach, Paris, France, (2000).
14. R. Saito and H. Kataura: Optical Properties and Raman Spectroscopy of Carbon Nanotubes in “Carbon Nanotubes”, Springer Series in Materials Science, eds. M. S. Dresselhaus and G. Dresselhaus and Ph. Avouris, pp. 213–246, Springer-Verlag, Berlin, (2001).
15. 齋藤 理一郎: カーボンナノチューブ – 期待される材料開発 – , 齋藤 理一郎 編集, pp. 2-15, シーエムシー出版, (2001).
16. R. Saito: Hybrid Orbital Control in Carbon Alloys in “Carbon Alloys”, eds. E. Yasuda, M. Inagaki, K. Kaneko, M. Endo, A. Oya, Y. Tanabe, pp. 15-40, Elsevier Science, Oxford, (2003).

17. 齋藤 理一郎: カーボンナノチューブの基礎と応用, 齋藤 理一郎, 篠原久典 編集, pp. 2-22, 培風館, (2004).
18. R. Saito, M. S. Dresselhaus, G. Dresselhaus, A. Jorio, A. G. Souza Filho, M. A. Pimenta: Carbon Nanotubes: Optical Properties, Encyclopedia of Nanoscience and Nanotechnology, Eds. J. A. Schwarz, C. L. Contescu, K. Putyera, pp.575-586, Marcel Dekker, New York, (2004).
19. 齋藤 理一郎: カーボンナノチューブ -立体構造と物性-, ナノマテリアルハンドブック, pp.532-537, (株) エヌ・ティー・エス, (2005).
20. 齋藤 理一郎: ナノチューブ, 物理学大事典 21.2.2 章, pp.789-795, 朝倉書店, (2005).
21. 齋藤 理一郎: CNT の分光学 (5.3 章), ナノカーボンハンドブック, pp.825-831, (株) エヌ・ティー・エス, (2007).
22. M. S. Dresselhaus, G. Dresselhaus, A. Jorio, R. Saito: Raman Spectroscopy of Carbon Nanotubes, Vol. Eds. S. Saito and A. Zettl, Series Eds. E. Burstein, M.L. Cohen, D.L. Mills and P.J. Stiles, Contemporary Concepts of Condensed Matter Science, Vol. 3, Carbon Nanotubes: Quantum Cylinders of Graphene, pp83-108, Elsevier, Netherlands, (2008).
23. R. Saito, C. Fantini, J. Jiang: Excitonic States and Resonance Raman Spectroscopy of Single-Wall Carbon Nanotubes, Carbon Nanotubes, Topics Appl. Phys. 111, Eds. A. Jorio, G. Dresselhaus, M. S. Dresselhaus, 251-286, Springer Verlag Berlin Heidelberg, (2008).
24. 齋藤 理一郎: 基礎固体物性, 現代物理学『基礎シリーズ』No. 6, 174 pages, 朝倉書店, (2009).
25. R. Saito, A. Jorio, J. Jiang, K. Sasaki, G. Dresselhaus, M. S. Dresselhaus: Optical Properties of Carbon Nanotubes and Nano-graphene, Oxford handbook of Nanoscience and Technology, Volume II: Materials, Eds. A. Narlikar, Y. Y. Fu, pp. 1-30, Oxford University Press, UK, (2010).
26. M. S. Dresselhaus, A. Jorio, R. Saito: Electrons and phonons in monolayer and few layer graphene, Giuseppe Franco Bassani: Uomo e Scienziato / Man and Scientist, Eds. G. Grosso and G. La Rocca, pp. 281-292, Societa Italiana di Fisica, Bologna, Italy, (2010).

27. A. Jorio, R. Saito, G. Dresselhaus, M. S. Dresselhaus: “Raman spectroscopy of graphene related systems”, pp. 1-354, Wiley-VCH, Weinheim Germany, (2011).
28. R. Saito: Raman spectroscopy of graphene edges, in ”Graphene and its fascinating attributes, Eds. S. K. Pati, T. Enoki, C. N. R. Rao, pp 91-103, World Scientific, Singapore, (2011).
29. M. Endo, Y. A. Kim, T. Hayashi, H. Muramatsu, R. Saito, M. Terrones, M. S. Dresselhaus: Double-walled carbon nanotubes: Synthesis, Characterization and Applications, Encyclopedia of Nanoscience and Nanotechnology, Ed. H. S. Nalwa, Vol. 13, pp. 113-158, American Scientific Publishers, Valencia, CA, USA, (2011).
30. 齋藤 理一郎: CNT の光吸収と発光, カーボンナノチューブ・グラフェンハンドブック, 齋藤弥八他編, pp 167-172, コロナ社, (2011).
31. 齋藤 理一郎: 13.6.2 カイラルインデックス (n,m) と電子状態, 炭素学, 田中一義, 東原秀和、篠原久典編, pp.358-365, 化学同人, (2011).
32. M.S. Dresselhaus, A. Jorio, L. G. Cançado, R. Saito: Raman spectroscopy: Characterization of edges, defects and the Fermi energy of Graphene and sp^2 carbons, Graphene Nanoelectronics: Springer, Ed. Hassan Raza, pp 15-55, Springer Verlag, Germany, (2012).
33. 齋藤 理一郎: グラフェンの光電子物性, グラフェンの最先端技術と拡がる応用, pp. 37-46, フロンティア出版, (2012).
34. 齋藤 理一郎: 1.1 ナノカーボン技術の現状と動向, 2.1 カーボンナノチューブの基礎、2.2 カーボンナノチューブの製造技術, 2.3 カーボンナノチューブの応用, 2013 ナノカーボン技術大全 , pp. 10-13, and pp. 20-31, 電子ジャーナル (2012).
35. R. Saito, G. Dresselhaus, M. S. Dresselhaus, A. Jorio, A. G. Souza Filho, M. A. Pimenta: Carbon Nanotubes: Optical properties, Dekker Encyclopedia of Nanoscience and Nanotechnology, Third Edition , Eds. J. A. Schwarz, C. L. Contescu, K. Putyera, pp.715-729, CRC Press, New York (2014).

36. 齋藤 理一郎: フラーレン・ナノチューブ・グラフェンの科学 – ナノカーボンの世界 –, 基礎法則から読み解く物理学最前線 No. 5, (須藤彰三、岡真監修), pp. 1-163, 共立出版 (2015).
37. 齋藤 理一郎: 苗の育て方、育ち方, 先生、物理っておもしろいんですか? (パリティ編集委員会編), pp. 179-182, 丸善出版 (2015).
38. R. Saito, A. R. T. Nugraha, E. H. Hasdeo, N. T. Hung, W. Izumida: Electronic and optical properties of single wall carbon nanotubes, Single-Walled Carbon Nanotubes: Preparation, Property and Application, Ed. Y. Li and S. Maruyama, Springer, Beijing, Topic in Current Chemistry, **375**, 1-24 (2017).
39. 齋藤 理一郎: グラフェンの基礎, 二次元物質の科学 グラフェンなどの分子シートが生み出す新世界 (日本化学会編), pp. 14-24, 化学同人 (2017).
40. R. Saito, Y. Tatsumi, T. Yang, H. Guo, L. Zhou, M.S. Dresselhaus: Double resonance Raman spectroscopy of two dimensional materials, submitted **Springer, Beijing**, 2017 ().

II Papers

1. R. Saito, and H. Kamimura: Vibronic states of polyacetylene, $(\text{CH})_x$, J. Phys. Soc. Japan **52**, 407-416 (1983).
2. R. Saito and H. Kamimura: Orbital susceptibility of higher stage GICs, Synthetic Metals **12**, 295-300 (1985).
3. R. Saito and H. Kamimura: Orbital susceptibility of higher stage graphite intercalation compounds, Phys. Rev. B **33**, 7218-7227 (1986).
4. R. Saito and H. Kamimura: Vibronic states of bond alternation defect in polyacetylene and ESR spectrum, Synthetic Metals **17**, 81-86 (1987).
5. R. Saito, M. Tsukada, K. Kobayashi, and H. Kamimura: Nuclear magnetic resonance in higher stage graphite intercalation compounds, Phys. Rev. B **35**, 2963-2971 (1987).
6. K. Shiraishi, A. Oshiyama, N. Shima, T. Nakayama, R. Saito and H. Kamimura: LSD calculation of electronic structure of high Tc superconductor: La-Sr-Cu-O systems, Jpn. J. Appl. Phys. **26 Supplement 26-3**, 983-984 (1987).
7. R. Saito and K. Murayama: A universal distribution function of relaxation in amorphous materials, Solid State Commun. **63**, 625-627 (1987).
8. R. Saito, K. Kobayashi, M. Tsukada and H. Kamimura: Theory of nuclear magnetic resonance in graphite and graphite intercalation compounds, Synthetic Metals **23**, 265-270 (1988).
9. R. Saito, N. Shima and H. Kamimura: Positron annihilation in graphite and graphite intercalation compounds, Synthetic Metals **23**, 217-222 (1988).
10. H. Kamimura, S. Matsuno, and R. Saito: Spin-polaron pairing and high-temperature superconductivity, Solid State Commun. **67**, 363-367 (1988).
11. C. Fretigny, R. Saito, and H. Kamimura: Electronic structures of unoccupied bands in graphite, J. Phys. Soc. Japan **58**, 2098-2108 (1989).

12. M. Eto, R. Saito, and H. Kamimura: Cluster simulation of correlation effect in hole-doped high-temperature superconductors, *Solid State Commun* **71**, 425-429 (1989).
13. R. Saito: Possible permutation symmetry in two dimensional Heisenberg model, *Solid State Commun.* **72**, 517-521 (1989).
14. R. Saito: A proof of the completeness of the non crossed diagrams in spin 1/2 Heisenberg model, *J. Phys. Soc. Japan.* **59**, 482-491 (1990).
15. M. Eto, R. Saito, H. Kamimura: Electronic structures of Nd_2CuO_4 and its electron-doped cluster systems, *Material Science and Engineering B* **6**, L1-L4 (1990).
16. T. Ishino, R. Saito, H. Kamimura: Symmetry studies of antiferromagnetic Heisenberg model, *J. Phys. Soc. Japan* **59**, 3886-3897 (1990).
17. H. Isshiki, R. Saito, T. Kimura and T. Ikoma: Characteristics of the electroluminescence and photoluminescence emissions of erbium ions doped in InP and energy transfer mechanism, *J. Appl. Phys.* **70**, 6993-6998 (1991).
18. R. Saito, and K. Kusakabe: A complete set of spin 1/2 functions by Young's diagrams, *J. Phys. Soc. Japan* **60**, 2388-2393 (1991).
19. R. Saito, H. Kamimura and K. Nagamine: Theory of positive muon spin rotation in La_2CuO_4 , *Physica C* **185-189**, 1217-1218 (1991).
20. R. Saito, and T. Kimura: Cluster calculation of rare-earth ions in semiconductors, *Phys. Rev. B* **46**, 1423-1428 (1992).
21. M. S. Dresselhaus, G. Dresselhaus, and R. Saito: Carbon fibers based on C_{60} and their symmetry, *Phys. Rev. B* **45**, 6234-6242 (1992).
22. R. Saito, M. Fujita, G. Dresselhaus, and M. S. Dresselhaus: Electronic structures of carbon fibers based on C_{60} , *Phys. Rev. B* **46**, 1804-1811 (1992).
23. R. Saito, M. Fujita, G. Dresselhaus, and M. S. Dresselhaus: Electronic structure of chiral graphene tubules, *Appl. Phys. Lett.* **60**, 2204-2206 (1992).

24. M. Fujita, R. Saito, G. Dresselhaus and M. S. Dresselhaus: Formation of general Fullerenes by their projection on a honeycomb lattice, Phys. Rev. B **45**, 13834-13836 (1992).
25. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Topological defects in large fullerenes, Chem. Phys. Lett. **195**, 537-542 (1992).
26. M. S. Dresselhaus, G. Dresselhaus, and R. Saito: C₆₀-related tubules, Solid State Commun. **84**, 201-204 (1992).
27. R. Saito, G. Dresselhaus and M. S. Dresselhaus: Ground states of large icosahedral fullerenes, Phys. Rev. B **46**, 9906-9909 (1992).
28. R. Saito, G. Dresselhaus and M. S. Dresselhaus: Electronic structure of double-layered graphene tubules, J. Appl. Phys. **73**, 494-500 (1993).
29. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Multiplet structures of C₆₀ ions, Chem. Phys. Lett. **210**, 159-164 (1993).
30. S. Itoh, R. Saito, T. Kimura, and S. Yabushita: Ab initio calculations of the multiplets terms of Tm³⁺, J. Phys. Soc. Jpn. **62**, 2924-2933 (1993).
31. R. Saito, M. Fujita, G. Dresselhaus, and M. S. Dresselhaus: Electronic structure and growth mechanism of carbon tubules, Material Science and Engineering B **19**, 185-191 (1993).
32. M.S. Dresselhaus, G. Dresselhaus and R. Saito: Group theoretical concept for C₆₀ and other fullerenes, Material Science and Engineering B **19**, 122-128 (1993).
33. S. Yamamura, T. Kimura, S. Yugo, R. Saito, M. Murata, T. Kamiya: Electrical and optical characterization of defect levels caused in InGaAs by boron ion implantation, Nuclear Instrument and Methods in Physics Research B **80/81**, 632-635 (1993).
34. S. Itoh, R. Saito, T. Kimura, and S. Yabushita: Relativistic effect on multiplet terms of rare earth ions, J. Phys. Soc. Jpn. **63**, 807-813 (1994).

35. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Thermodynamic model of ordering transition in solid C₆₀, Phys. Rev B **49**, 2143-2147 (1994).
36. M. S. Dresselhaus, R. A. Jishi, G. Dresselhaus, D. Inomata, K. Nakao and R. Saito: Group theoretical concepts for carbon nanotubes, Molecular Materials , 27-40 (1994).
37. P. C. Eklund M. S. Dresselhaus, G. Dresselhaus, and R. Saito: Application of molecular concepts to the vibrational spectroscopy of solid C₆₀, Molecular Materials , 177-183 (1994).
38. T. Kimura, H. Isshiki, H. Ishida, S. Yugo, R. Saito, and T. Ikoma: Time-resolved study on the impact excitation and quenching processes of the 1.54 μ m electroluminescence emission of Er ions in InP, J. Appl. Phys. **76**, 3714-3719 (1994).
39. T. Kimura, A. Yokoi, H. Horiguchi, R. Saito, T. Ikoma and A. Sato: Electrochemical Er doping of porous silicon and its room-temperature luminescence at $\sim 1.54\mu\text{m}$, Appl. Phys. Lett. **65**, 983-985 (1994).
40. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Hindered rotation of solid ¹²C₆₀ and ¹³C₆₀, Phys. Rev B **50**, 5680-5688 (1994).
41. Y. Shinohara, R. Saito, T. Kimura, G. Dresselhaus, and M. S. Dresselhaus: Infrared-active modes of C₇₀, Chem. Phys. Lett. **227**, 365-370 (1994).
42. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Magnetic energy bands of carbon nanotubes, Phys. Rev B **50**, 14698-14701 [Erratum B 53 10408 (1996)] (1994).
43. M. S. Dresselhaus, G. Dresselhaus, and R. Saito: Physics of Carbon nanotubes, Carbon **33**, 883-891 (1995).
44. T. Kimura, A. Yokoi, Y. Nishida, R. Saito, S. Yugo and T. Ikoma: Photoluminescence of ytterbium doped porous silicon, Appl. Phys. Lett. **67**, 2687-2689 (1995).
45. R. Saito, G. Dresselhaus, and M. S. Dresselhaus: Tunneling conductance of connected carbon nanotubes, Phys. Rev B **53**, 2044-2050 (1996).

46. S. Ito, N. Nameda and R. Saito: Multiplet Structure calculation for Rare Earth Ions, *J. Light and Visual Environment* **20**, 15-19 (1996).
47. M. Nakadaira, R. Saito, T. Kimura, G. Dresselhaus, and M. S. Dresselhaus: Excess Li Ions in a Small Graphite Cluster, *J. Mater. Res.* **12**, 1367-1375 (1997).
48. T. Kimura, M. Saito, S. Tachi, R. Saito, M. Murata, and T. Kamiya: Mechanism for Implantation Induced Interdiffusion at $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{In}_{0.52}\text{Al}_{0.48}\text{As}$ Heterointerfaces, *Mat. Sci. Eng., B* **44**, 28-32 (1997).
49. R. Saito, T. Takeya, T. Kimura, G. Dresselhaus, M. S. Dresselhaus: Raman Intensity of Single-Wall Carbon Nanotubes, *Phys. Rev. B* **57**, 4145-4153 (1998).
50. M. S. Dresselhaus, G. Dresselhaus, P. C. Eklund, and R. Saito: Carbon Nanotubes, *Physics World* **11**, 33-38 (1998).
51. T. Kimura, Y. Nishida, A. Yokoi, and R. Saito: Enhanced Yb^{3+} -related $0.98\mu\text{m}$ emission in porous silicon and its time decay characteristics, *J. Appl. Phys.* **83**, 1005-1008 (1998).
52. T. Ando, T. Nakanishi, and R. Saito: Berry's Phase and Absence of Back Scattering in Carbon Nanotubes, *J. Phys. Soc. Japan* **67**, 2857-2862 (1998).
53. T. Dejima, R. Saito, S. Yugo, H. Isshiki, and T. Kimura: Effects of hydrogen plasma treatment on the $1.54\mu\text{m}$ luminescence of erbium-doped porous silicon, *J. Appl. Phys.* **84**, 1036-1040 (1998).
54. R. Saito, T. Takeya, T. Kimura, G. Dresselhaus and M. S. Dresselhaus: Finite Size Effect on the Raman Spectra of Carbon Nanotubes, *Phys. Rev. B* **59**, 2388-2392 (1999).
55. S. Roche and R. Saito: Effects of magnetic field and disorder on electronic properties of carbon nanotubes, *Phys. Rev. B* **59**, 5242-5246 (1999).
56. T. Kimura, T. Nakanose, W. Wang, H. Isshiki, and R. Saito: Energy transfer efficiency of the $1.54\mu\text{m}$ luminescence of Er-implanted silicon in relation to post-implantation annealing and impurity coimplantation,

Nuclear Instrument and Methods in Physics Research B **148**, 486-491 (1999).

57. R. Saito, M. Yagi, T. Kimura, G. Dresselhaus and M. S. Dresselhaus: Electronic Structure of Fluorine Doped Graphite Nanoclusters, J. Phys. Chem. Solid **60**, 715-721 (1999).
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