業　績　目　録

小　田　垣　　孝

著 書 な ど

[著書・編書]

1. 小田垣孝
   “パーコレーションの科学” (裳華房, 1993)
2. T. Odagaki, Y. Hiwatari and J. Matsui (編)
   “Dynamics of Glass Transition and Related Topics”, (Progress of Theoretical Physics, Kyoto, 1997)
3. 小田垣孝
   “基礎科学のための数学的手法”, (裳華房, 2000)
4. 小田垣孝
   “つながりの科学”, (ポピュラーサイエンス 216:裳華房, 2000)
5. 小田垣孝
   “統計力学”, (裳華房, 2003)
6. 小田垣孝
   “自然をみる目を育てる　力学の初歩”, (培風館, 2011)
7. 小田垣孝
   “自然をみる目を育てる　電磁気学の初歩”, (培風館, 2012)
8. 小田垣孝
   “エッセンシャル 統計力学”, (裳華房, 2017)
9. 小田垣孝
   “つながりの物理学”,(裳華房.2020)
10. 小田垣孝, 佐野幸恵、山崎義弘、山本健
    “社会物理学”, (共立出版, 2022)
11. 小田垣孝
    “電子版 エッセンシャル 統計力学”, (裳華房, 2023)

[翻　訳]

1. 小田垣 孝, 山本常信
   “熱力学”(H. B. Callen :Thermodynamics) (吉岡書店, 1978)
2. T. Matsubara, T. Tsuneto, T. Murao, F. Yonezawa, K Machida and T. Odagaki
   “The Structure and Properties of Matter” edited by T. Matsubara, Springer Series in Solid-State Science **28**: 物性 I (岩波書店) の英訳, (Springer, Berlin-Heidelberg, 1982)
3. 小田垣 孝
   “浸透理論の基礎” (D. Stauffer: Introduction to Percolation Theory) (吉岡書店, 1988)
4. 小田垣 孝, 山田興一
   “非線形ファイバー光学” (G. P. Agrawal: Nonlinear Fiber Optics)(吉岡書店, 1997)
5. 小田垣 孝
   “熱力学および統計物理入門” (H. B. Callen: Thermodynamics and An Introduction to Thermostatistics) (吉岡書店, 1998, 1999)

6. 小田垣 孝
“パーコレーションの基本原理” (D. Stauffer and A. Aharony: Introduction to Percolation Theory 2nd Edition) (吉岡書店, 2001)

7. 小田垣 孝, 吉留崇, 大久保毅
“現代の物性物理学”(M. L. Cohen and S. G. Luie:Dundametals of Condensed Matter Physics) (吉岡書店, 2021).

学 術 論 文

研究分野を
［１］ガラス転移を中心とした非平衡系の物理
［２］不規則系の電子構造とトランスポート
［３］パーコレーション・ネットワーク
［４］準結晶
［５］社会物理学
［６］その他（ソリトン、ソフトマターなど）
に分けて記載する。

[I] ガラス転移を中心とした非平衡系の物理

［主な成果］
○ ガラス転移のトラッピング拡散模型を提出した
○ ガラス転移の熱力学的および動的特徴を現象論的に説明する自由エネルギーランドスケープ描像を確立した
○ 剛体球系の自由エネルギーランドスケープを具体的に構築できることを示した
○ 1 成分単純系のガラス化に成功した
○ エージング効果と自由エネルギーランドスケープの緩和との関係を明らかにし、遅い緩和の新しい関数系を示すと共に、二つの型のエージングが存在することを示した
○ Adam-Gibbs 関係式を FEL 描像に基づいて基礎づけた

1. T. Odagaki and Y. Hiwatari
“Stochastic model for the glass transition of simple liquids”, Phys. Rev. **A41** 929–937 (1990)

2. T. Odagaki and Y. Hiwatari
“Gaussian–Non-Gaussian Transition in Super-cooled Fluids”, Phys. Rev. **A43** 1103–1106 (1991)

3. T. Odagaki and Y. Hiwatari
“Residence time distribution of a tracer atom in supercooled fluids”, J. Phys.: Condens. Matter **3** 5191–5194 (1991)

4. T. Odagaki and Y. Hiwatari
“Apparent subdiffusive properties of a supercooled fluid”, Phys. Rev. B**46**, 1250-52 (1992)

5. Y. Hiwatari, J. Matsui, K. Uehara, T. Muranaka, H. Miyagawa, M. Takasu, and T. Odagaki
“Study of the α and β relaxations in a supercooled fluid via molecular-dynamics simulations”, Physica A **204**, 306–327 (1994)

6. T. Odagaki, J. Matsui and Y. Hiwatari
“Trapping diffusion model for glass transition and slow dynamics in supercooled liquids”, Physica A **204**, 464–481 (1994)

7. T. Odagaki, J. Matsui and Y. Hiwatari
“Slow dynamics in supercooled liquids”, Phys. Rev. E**49**, 3150–9 (1994)

8. J. Matsui, T. Odagaki, and Y. Hiwatari
“Study of the slow dynamics in a highly supercooled fluid: Super-long-time molecular

dynamics calculation of the generalized susceptibility", Phys. Rev. Lett. **73**, 2452–2455 (1994)

9. T. Odagaki
"Glass transition singularities", Phys. Rev. Lett. **75**, 3701–3704 (1995)

10. Y. Hiwatari, J. Matsui, T. Muranaka and T. Odagaki
"Slow Dynamics in Supercooled Fluids", J. Mol. Liquids **65/66**, 123–130 (1995)

11. M. Higuchi and T. Odagaki
"Properties of the ideal three-mode model for the dynamics of supercooled liquids", J. Phys. Soc. Jpn. **66**, 3134–3138 (1997)

12. T. Odagaki and A. Yoshimori
"Microscopic derivation of jump rate distribution and the glass transition", J. Phys.: Condens. Matter **12**, 6509–6514 (2000)

13. J. Koga and T. Odagaki
"Stochastic orientational relaxation of a plastic crystal", J. Phys. Chem. **104**, 3808–3811 (2000)

14. T. Odagaki, O. Yamamuro, M. Higuchi and T. Matsuo
"Scaling of the specific heat of fragile glass formers near the glass transition", J. Phys. Soc. Jpn. **69**, 991–992 (2000)

15. T. Odagaki and A. Yoshimori
"Localization transition in the vitrification process", Physica B **206**, 174–179 (2001)

16. T. Tao, A. Yoshimori and T. Odagaki
"Specific heat in nonequilibrium systems", Phys. Rev. E**64**, 046112-1–5 (2001)

17. M. Higuchi and T. Odagaki
"The Johari-Goldstein process of a model diatomic molecular system in the supercooled state", J. Phys. Soc. Japan **71**, 735-738 (2002)

18. T. Odagaki, T. Tao and A. Yoshimori
"Specific heat in nonequilibrium systems and glass transition", J. Non-Cryst. Sol. **307-310**, 407–411 (2002)

19. T. Odagaki and A. Hoshiko
"Random jammed packing of binary hard disks" J. Phys. Soc. Japan **71**, 2350–2351 (2002)

20. T. Tao, A. Yoshimori and T. Odagaki
"Specific heat in a nonequilibrium system composed of Einstein oscillators", Phys. Rev. E**66**, 041103-1–5 (2002)

21. T. Odagaki, T. Yoshidome, T. Tao and A. Yoshimori
"Specific heat anomaly at the glass transition", J. Chem. Phys. **117**, 10151-10155 (2002)

22. M. Higuchi, J. Matsui and T. Odagaki
"Slow Relaxations in the Supercooled State of a Model Diatomic Molecular System", J. Phys. Soc. Japan **72**, 178–184 (2003)

23. T. Okubo and T. Odagaki
"Random packing of binary hard discs", J. Phys.: Condens. Matter **16**, 6651–59 (2004)

24. T. Tao, T. Odagaki and A. Yoshimori
"Cooling rate dependence of specific heat in systems out of equilibrium", J. Chem. Phys. **122**, 044505-1–044505-5 (2005)

25. A. Yoshimori and T. Odagaki
"A Microscopic Model of Jump Rate Distribution in the Glass Transition", J. Phys. Soc. Jpn. **74**, 1206–1213 (2005)

26. T. Tagawa and T. Odagaki
"Analysis of Diffusion Constant and Non-Gaussianity near the Glass Transition Point in the Frequency Domain", J. Phys. Soc. Jpn. **74**, 1988–1991 (2005)

27. T. Yoshidome, A. Yoshimori and T. Odagaki
"Construction of the free energy landscape by the density functional theory", J. Phys. Soc. Jpn. **75**, 054005-1–4 (2006) Flow Dynamics" edited by Tokuyama and S. Maruyama, (AIP 2006), P.188–192.

28. T. Odagaki, T. Yoshidome, A. Koyama and A. Yoshimori
"Free Energy Landscape Approach to Glass Transition", J. Non-Crys. Solids **352**, 4843–4846 (2006)

29. T. Tagawa and T. Odagaki
"Nonlinear Energy Response to Oscillating Temperature in the Free Energy Landscape Picture", J. Phys. Soc. Jpn. **75**, 124003-1–8 (2006)

30. T. Odagaki and T. Ekimoto
"Fast and Slow Relaxations in the Free Energy Landscape", J. Non-Crys. Solids **353**, 3928–3931 (2007)

31. T. Yoshidome, A. Yoshimori and T. Odagaki
"Free energy landscape and cooperatively rearranging region in a hard sphere glass", Phys. Rev. E **76**, 021506 (2007) (7 pages)

32. F. Tagawa and T. Odagaki
"Nonlinear Energy Response of Glass Forming Materials", J. Phys.: Condens. Matter **20**, 035105 (2008)(9 pages)

33. T. Ekimoto, T. Odagaki and A. Yoshimori
"Separation of Dynamics in the Free Energy Landscape", CP982, Complex Systems eds. M. Tokuyama, I. Oppenheim and H. Nishiyama (AIP, 2008) 211–214.

34. T, Mizuguchi, T. Odagaki, M. Umezaki, T.Koumyou and J. Matsui
"Glass Transition in a Spherical Monoatomic Liquid", CP982, Complex Systems eds. M. Tokuyama, I. Oppenheim and H. Nishiyama (AIP, 2008) 234–237.

35. Vo Van Hoang, T. Odagaki and M. Engel
"Cooling rate effects on structure and thermodynamics of amorphous nanoparticles", App. Surf. Sci. **254**, 7531–7534 (2008)

36. Vo Van Hoang and T. Odagaki
"Molecular dynamics simulations of simple monatomic amorphous nanoparticles", Phys. Rev. B**77**, 125434((11pages)(2008)

37. Vo Van Hoang, T. Odagaki and M. Engel
"Cooling-rate effects in simple monatomic amorphous nanoparticles", Phil. Mag. **88**, 1461–1475 (2008)

38. T. Yoshidome, T. Odagaki and A. Yoshimori
"Free energy landscape for a tagged particle in the dense hard sphere fluid", Phys. Rev. E **77**, 061503 (2008)(6 pages)

39. Vo Van Hoang and T. Odagaki
"Glasses of Simple Liquids with Double-Well Interaction Potential", Physica B **403** (21), 3910–3915 (2008)

40. T. Odagaki and A. Yoshimori
"Free Energy Landscape Theory of Glass Transition and Entropy", J. Non-Crys. Solids **355**, 681–685 (2009)

41. T, Mizuguchi and T. Odagaki
"Vitrification of a monatomic 2D simple liquid", Cent. Eur. Phys. J. accepted for publication (2009) (online)

42. T. Mizuguchi and T. Odagaki
"Glass Formation and Crystallization of a Simple Monatomic Liquid", Phys. Rev. E **79**, 051501 (2009)(6 pages)

43. V.V. Hoang and T. Odagaki
"Atomic mechanism of glass formation in supercooled monatomic liquids", Solid State Commun. **150**, 1971–1975 (2010).

44. A. Suematsu, A. Yoshimori and T. Odagaki
"Studies of liquid-solid transitions using a thermodynamic perturbation method with modified weighted density approximation", J. Phys. Soc. Jpn. **82**, 025001 (2011). (2pages)

45. T. Odagaki, H. Katou and Y. Saruyama
"Linear and non-linear dielectric responses of a model glass former", J. Phys. Soc. Jpn. **80**. 053705 (2011).(4pages)

46. Vo Van Hoang and T. Odagaki
"Glass formation and thermodynamics of supercooled monatomic liquids", J Phys Chem B. **115**(21) (2011) 6946-56(Jun 2). Epub 2011 May 9

47. A. Yoshimori and T. Odagaki
"Configurational Entropy and Heat Capacity in Supercooled Liquids", J. Phys. Soc. Jpn. **80** 064601 (2011).(5pages)

48. T. Mizuguchi and T. Odagaki
"Dynamics of Vitrification and Crystallization in a Two-Dimensional Monatomic System", J. Phys. Soc. Jpn. **81**, 024601(2012) (7 pages).

49. T. Odagaki, M. Kuroda and Y. Saruyama
"Non-linear dielectric responses of a model glass former under oscillating temperature", J. Phys.Soc. Jpn. **81**, 104714 (2012) (5pages).

50. Toru Ekimoto, Akira Yoshimori, Takashi Odagaki and Takashi Yoshidome
"A theoretical framework for calculations of the structural relaxation time on the basis of the free energy landscape theory" Chem. Phys. Lett., **577**, 58–61 (2013)

51. A. Suematsu, A. Yoshimori, M. Saiki, J. Matsu and T. Odagaki
"Solid phase stability of a double-minimum interaction potential system" J. Chem. Phys. **140**, 244501-1-8(2014).

52. A. Suematsu, A. Yoshimori, M. Saiki, J. Matsui, T. Odagaki
"Control of solid-phase stability by interaction potential with two minima" J. Mole. Liquids, **200**, Part A, 12–15 (2014).

53. T. Odagaki Y. Saruyama, and T. Ueno
"Temperature-modulation spectroscopy of non-equilibrium systems" J. Non-Cryst. Solids **407** 57–60 (2015)(online 1 September 2014).

54. Vo Hoang, Dao Kim Thoa, Takashi Odagaki, and Le Ngoc Qui
"Substrate Effects on Glass Formation in Simple Monatomic Supercooled Liquids" Chem. Phys. **447**, 1–9 (2015).

55. Vo Hoang, Victor Teboul andTakashi Odagaki
"New Scenario of Dynamical Heterogeneity in Supercooled Liquid and Glassy States of 2D Monatomic System.", J. Phys. Chem. B**119**(51), 15752–7 (2015)

56. T. Mizuguchi, Y. Higeta and T. Odagaki
"Critical nucleus size for crystallization of supercooled liquids in two dimensions", Physical Reveiew E **95**, 042804-1-6 (2017).

57. T.Odagaki, Y.Saruyama, T.Ishida
"Relaxation of the free energy landscape and temperature modulation", Journal of Non-Crystalline Solids, **558**, 119448–1-5:online 11 September 2019, 119448.

58. T. Odagaki
"Waiting time dependence of aging", J. Phys.: Condens. Matter **35**, 124001 (7pp)(2023).

59. T. Mizuguchi and T. Odagaki
"Determination of cooperatively rearranging regions in a binary glass former", J. Phys.: Condens. Matter, **35**, 334003 (5pp)(2023).

[II] 不規則系の電子構造とトランスポート
［主な成果］
○ 拡散に対するマスター方程式による記述の正当性を線形応答理論に基づき証明し、マスター方程式に対する平均媒質近似法を定式化した
○ トラッピング拡散における異常拡散と準異常拡散の存在を示した
○ 境界摂動に対する応答と初到達時間分布との関係を、古典論及び量子論で証明し、古典系で自己平均性が破れることを示した
○ ハミルトニアンの非対角成分がランダムな系におけるアンダーソン局在の存在を示した

1. F. Yonezawa and T. Odagaki
"Analyticity of Homomorphic Cluster Coherent Potential Approximation", J. Phys. Soc. Jpn. **45**, 691–692 (1978)

2. T. Odagaki and F. Yonezawa
"Homomorphic Cluster Coherent Potential Approximation for Off-Diagonal Randomness", J. Phys. Soc. Jpn. **45**, 693–694 (1978)

3. F. Yonezawa and T. Odagaki
"Analytic Extension of the Coherent Potential Approximation to Clusters", Solid State Commun. **27**, 1199–1202 (1978)

4. T. Odagaki and F. Yonezawa
"Rigorous Proof for Analyticity of the Homomorphic Cluster Coherent Potential Approximation", Solid State Commun. **27**, 1203–1206 (1978)

5. T. Odagaki and F. Yonezawa
"A Comment on Anderson's Transition in Systems with Purely Off-Diagonal Disorder", Solid State Commun. **27**, 1207–1210 (1978)

6. T. Odagaki and F. Yonezawa
"Analytic Properties of the Homomorphic Cluster Coherent Potential Approximation", J. Phys. Soc. Jpn. **47** 379–387 (1979)

7. F. Yonezawa and T. Odagaki
"Homomorphic Cluster Coherent Potential Approximation for Systems with Site-Diagonal and/or Off-Diagonal Randomness", J. Phys. Soc. Jpn. **47** 388–393 (1979)

8. T. Odagaki
"Electron Localization is Systems with Purely Off-Diagonal Randomness", Solid State Commun. **33**, 861–865 (1980)

9. T. Odagaki
"Notes on Anderson's Transition in A Lattice Model for Topologically Disordered Systems", Solid State Commun. **35**, 639–641, (1980)

10. T. Odagaki and M. Lax
"ac Hopping Conductivity of a One-Dimensional Bond Percolation Model", Phys. Rev. Letters **45**, 847–850 (1980)

11. T. Odagaki and M. Lax
"Coherent medium approximation in the stochastic transport theory of random media", Phys. Rev. **B24**, 5284–5294 (1981)

12. A. Puri and T. Odagaki
"Electron localization in spatially disordered systems", Phys. Rev. **B24** 5541–5546 (1981)

13. T. Odagaki and M. Lax
"Reply to 'Effect of periodic boundary conditions in the calculation of ac conductivity for a one-dimensional percolation model' ", Phys. Rev. **B25** 1392–1393 (1982)

14. T. Odagaki and M. Lax
"Hopping conduction in positionally disordered chains", Phys. Rev. **B25** 2301–2306 (1982)

15. T. Odagaki and M. Lax
"Low-frequency hopping conductivity of random chains", Phys. Rev. **B25** 2307–2309 (1982)

16. T. Odagaki and M. Lax
"Some exact results in hopping conduction" Phys. Rev. **B26**, 6480–6489 (1982)

17. T. Odagaki, M. Lax and A. Puri
"Hopping conduction in the d-dimensional lattice bond-percolation problem", Phys. Rev. **B28**, 2755–2765 (1983)

18. A. Puri and T. Odagaki
"Effects of short range order on electron localization in spatially disordered systems", Phys. Rev. **B29**, 1707–1712 (1984)

19. T. Odagaki, M. Lax and R. S. Day
"Dispersive hopping conduction in quasi-one-dimensional systems", Phys. Rev. **B30**, 6911–6916 (1984)

20. T. Odagaki
"Termite and ant diffusions in the d-dimensional lattice trapping model", J. Phys. **A20** 6455–6462 (1987)

21. T. Odagaki
"Anomalous and sub-anomalous diffusion in trapping stochastic transport", Phys. Rev. **B38** 9044–53 (1988)

22. A. Puri and T. Odagaki
"Hopping conduction in ant-termite mixtures", J. Phys., **A22** 3681–3692 (1989)

23. M. Cáceres, H. Matsuda, T. Odagaki, D. P. Prato and W. Lamberti, "Theory of diffusion in finite random media with dynamics boundary condition", Phys. Rev. B **56**, 5897–5908 (1997)

24. M. Kawasaki, T. Odagaki and K. Kehr
"Absence of self-averaging in the complex admittance for transport through random media", Phys. Rev. B**61**, 5839–5842 (2000)

25. M. Kawasaki, T. Odagaki and K. Kehr
"Absence of self-averaging in the complex admittance for transport through disordered media", Phys. Rev. B**67**, 134203-1–16 (2003)

26. T. Okubo and T. Odagaki
"Dissipative process under a boundary perturbation", Phys. Rev. E **73**, 026128-1–6 (2006)

27. Y. Imoto and T. Odagaki
"Diffusion on diffusing particles", Diffusion Fundamentals II (Leipziger Universitäts verlag, 2007), P 132–138

28. T. Odagaki and K. Kasuya
"Alzheimer random walk", Eur. Phys. J. B **90**, 174–1-5(2017).

29. T. Odagaki
"Variable range random walk", Physica A **603**, 127781-1–7(2022).

[III] パーコレーション・ネットワーク
［主な成果］
○ ベーテ格子上の格子気体のパーコレーションの厳密解を求めた
○ 繰り込み群により量子パーコレーションの臨界指数を求め、古典パーコレーションと異なることを示した
○ つながりの強度が距離によって変化するソフトパーコレーション過程において、逆ユニバーサリティーが存在することを示した
○連続媒質中のパーコレーションに対するパッキングーパーコレーション法の開発
○スモールワールド型ニューラルネットワークの記憶効率がランダムネットワークより低いことを示した

1. T. Odagaki and T. Yamamoto
"Magnetic Moment of Binary γ-Alloys at 0K", J. Phys. Soc. Jpn. **32**, 104–109 (1972)

2. T. Odagaki, N. Ogita and H. Matsuda
"Percolation Approach to the Metal-Insulator Transition in Super-Critical Fluid Metals", J. Phys. Soc. Jpn. **39**, 618–624, (1975)

3. T. Odagaki
"Temperature-Dependent Percolation Problem in the Bethe Lattice", Prog. Theor. Phys. **54**, 1067–1076 (1975)

4. T. Yamamoto, T. Tatsumi and T. Odagaki
"Effect of Local Concentration Fluctuation on the Magnetism of Invar Alloys", in *Physics and Application of Invar Alloys*, eds. S. Chikazumi et al (Maruzen, Tokyo, 1978) Chap. 16, 385–391

5. T. Odagaki, N. Ogita and H. Matsuda
"Percolation Approach to the Metal-Insulator Transition in Super-Critical Fluid Metals II —Quantal Percolation Approach —", J. Phys. Soc. Jpn. **46**, 1087–1091 (1979)

6. T. Odagaki, N. Ogita and H. Matsuda
"Quantal Percolation Problems", J. Phys. **C13**, 189–195 (1980)

7. K. C. Chang and T. Odagaki
"Bond-site percolation problem", J. Stat. Phys. **35**, 507–516 (1984)

8. T. Odagaki and K. C. Chang
"Real-space renormalization group analysis of quantum percolation", Phys. Rev. **B30**, 1612–1614 (1984)

9. T. Odagaki
"Dynamic diffusion in the *d*-dimensional termite model", Phys. Rev. **B33**, 544–550 (1986)

10. D. Nguyen and T. Odagaki
"Quantum versus classical polarizability of one-dimensional percolation model", Phys. Rev. **B33**, 6549–6551 (1986)

11. K. C. Chang and T. Odagaki
"Localization and Tunneling Effects in Percolating Systems", Phys. Rev. **B35** 2598–2603 (1987)

12. T. Odagaki and M. Lax
"Percolation in Spatially Disordered Systems", Phys. Rev. **B36** 3851–3857 (1987)

13. K. C. Chang and T. Odagaki
"Large-cell Monte Carlo renormalization group for quantum percolation", J. Phys. **A20** L1027–L1030 (1987)

14. T. Odagaki
"Contrauniversality in percolation with variable strength of connection", J. Phys.: Condens. Matter **1** 1013–16 (1989)

15. Y. Wachi, T. Odagaki and A. Puri
"Non-universal behavior of the diffusivity-exponent for the soft-percolation process in two dimensions", Phys. Rev. B**50**, 13412–8 (1994)

16. S. Toyofuku and T. Odagaki
"Properties of granular percolation in two dimensions", J. Phys. Soc. Jpn. **66**, 3512–3516 (1997)

17. T. Odagaki and S. Toyofuku
"Properties of percolation clusters in a model granular system in two dimensions", J. Phys.: Condens. Matter **10**, 6447–52 (1998)

18. Y. Hara and T. Odagaki
"Non-universal diffusion exponent of soft percolation cluster in three dimensions", J. Phys. Soc. Jpn. **69**, 3315–3319 (2000)

19. F. Mori and T. Odagaki
"Percolation analysis of clusters in random graphs", J. Phys. Soc. Jpn. **70**, 2485–2489 (2001)

20. T. Takayama and T. Odagaki
"Crossover from two to three dimensional percolation in thin layers", J. Phys. Soc. Jpn. **70**, 3176–377 (2001)

21. F. Mori and T. Odagaki
"The Laplacian Spectra of Small World Networks", J. Phys. Soc. Jpn.**73**, 3294–3298 (2004)

22. R. Ogata, T. Odagaki and K. Okazaki
"Effects of polydispersity on continuum percolation", J. Phys.: Condens. Matter **17**, 4531–4538 (2005)

23. K. H. Chang, Kyungsik Kim, M.-K. Yum, J. S. Choi and T. Odagaki
"Reaction-Diffusion Processes on Small-World Networks", J. Phys. Soc. Jpn. **74**, 2860–2861 (2005)

24. H. Oshima and T. Odagaki
"The Storage Capacity and Retrieval Time of Small-world Neural Networks", Phys. Rev. E**76**, 036114 (2007)(6 pages)

25. S. Akagawa and T. Odagaki
"Geometrical percolation of hard-core ellipsoids of revolution in the continuum", Phys. Rev. E**76**, 051402 (2007)(5 pages)

26. F. Mori and T. Odagaki
"Synchronization of coupled oscillators on small-world networks", Physica D **238** No. 14, 1180–1185 (2009)

27. H. Oshima and T. Odagaki
"Effects of network structure on associative memory", in *Modelling Perception With Artificial Neural Networks*, eds. C. R. Tosh and G. D. Ruxton (Cambridge University Press, UK,2010) p.134–148.

28. H. Oshima and T. Odagaki
"Finite memory walk and its application to the small world network", J. Phys. Soc. Jpn., **81**, 074004 (2012) (7pages).

29. H. Oshima and T. Odagaki
" Boundary Perturbation Analysis of Complex Networks", J. Phys. Soc. Jpn., **81**, 124009 (2012) (8pages).

30. Kenji Maruyama, Hirohisa Endo, Hideoki Hoshino, Friedrich, Hensel, Takashi Odagaki
"Packing of tetrahedral Hg4 blocks and distribution of interstitial voids in expanded liquid Hg", J. Phys. Soc. Jpn. (2013).

31. S. Matsumoto and T. Odagaki
"Anisotropic percolation analysis of discharge", J. Phys.Soc. Jpn. **83**, 034006-1–6 (2014).

[IV] 準結晶
［主な成果］
○ 準結晶の電子状態、振動状態の特徴を明らかにした
○ 1次元準周期構造におけるハイパーインフレーションを発見し、その完全な記述を行った
○ フェイゾンダイナミックスのミクロ構造を明らかにした

1. T. Odagaki and D. Nguyen
"Electronic and vibrational spectra of two-dimensional quasi-crystals", Phys. Rev. **B33**, 2184–2190 (1986); erratum, Phys. Rev. **B34**, 5929–5930 (1986)

2. T. Odagaki and L. Friedman
"Quasi-periodic Superlattices", Solid State Commun. **57**, 915–917 (1986)

3. J. P. Lu, T. Odagaki and J. L. Birman
"Properties of one-dimensional quasi-lattices", Phys. Rev., **B33**, 4809–4817 (1986)

4. T. Odagaki
"Properties of Tight-Binding Electrons in a Two-Dimensional Quasi-Lattice", Solid State Commun. **60**, 693–696 (1986)

5. H. Aoyama and T. Odagaki
"Eight-Parameter Renormalization Group for Penrose Lattices", J. Stat. Phys. **48** 503–511 (1987)

6. H. Aoyama and T. Odagaki
"Bond Percolation on Two-Dimensional Quasi-Lattices", J. Phys. **A20** 4985–4993 (1987)

7. H. Aoyama and T. Odagaki
"Renormalization Group Analysis of the Ising Model on Two-Dimensional Quasi-Lattices", Int. J. Mod. Phys. **B2** 13–35 (1988)

8. T. Odagaki and H. Aoyama
"Hyperinflation in periodic and quasiperiodic chains", Phys. Rev. Lett. **61** 775–8 (1988)

9. T. Odagaki and H. Aoyama
"Self-similarities in one-dimensional periodic and quasi-periodic systems", Phys. Rev. **B39** 475–87 (1989)

10. T. Odagaki
"Hyperinflation in the Ising model on quasi-periodic chains", J. Math. Phys., **31** 421–422 (1990)

11. T. Odagaki
"Hyperinflation approach to a tight-binding model in quasiperiodic chains", J. Phys. Soc. Jpn, **61**, 3643-50 (1992)

12. M. Kaneko and T. Odagaki
"Selfsimilarity in a class of quadratic-quasiperiodic chains", J. Phys. Soc. Jpn. **62**, 1147–1152 (1993)

13. T. Odagaki and M. Kaneko
"Self-similarity of binary quasiperiodic sequences", J. Phys. A:Math. Gen. **27**, 1683–1690 (1994)

14. M. Torikai, K. Niizeki and T. Odagaki
"Binary self-similar one-dimensional quasilattices: Mutual local-derivability classification and substitution rules", J. Phys. Soc. Jpn. **70**, 2918–2933 (2001)

15. M. Torikai and T. Odagaki
"Anomalous thermal conductivity and local temperature distribution on harmonic Fibonacci chains", J. Phys.:Condens. Matter **14**, L503–L510 (2002)

16. H.-R. Trebin, U. Koschella, M. Umezaki and T. Odagaki
"Investigation of phason statics and dynamics", Philo.Mag. **86**, 1021–1028 (2006)

17. Michael Engel, Masahiro Umezaki, Hans-Rainer Trebin, and T. Odagaki
"Dynamics of particle flips in two-dimensional quasicrystals", Phys. Rev. B**82**, 134206 (2010).

[V] 社会物理学
［主な成果］
○ 民族の特徴による階級発生の特徴の違いを明らかにした
○ プルトノミー社会が自己組織化される理由を明らかにした
○ COVID-19 に対する SIQR モデル、SPAQR モデルを提案し、感染の特徴を明らかにした

1. T. Odagaki and M. Tsujiguchi
"Self-organizing social hierarchies in a timid society", Physica A **367C**, 435–440(2006)

2. R. Fujie and T. Odagaki
"Effects of superspreaders in spread of epidemic", Physica A **374**, 843–852 (2007)

3. M. Tsujiguchi and T. Odagaki
"Self-organizing social hierarchy and villages in a challenging society", Physica A **375**, 317–322 (2007)

4. T. Okubo and T. Odagaki
"Mean-field analysis of phase transitions in the emergence of hierarchical society", Phys. Rev. E **76**, 036105 (2007) (13 pages)

5. R. Fujie and T. Odagaki
"Self organization of social hierarchy and clusters in a challenging society with free random walks" Physica A **389**, 1471–1479 (2010)

6. R. Fujie and T. Odagaki
"Self organization of social hierarchy on interaction network" J. Stat. Mech. (2011) P06011(15pages)

7. R. Fujie and T. Odagaki
"Self organization of social hierarchy in competitive society", J. Phys. Soc. Jpn. **80**, 124802 (2011)(5 pages).

8. 小田垣　孝
"99% の悲劇ープルトノミー社会は何故生まれるのかー", パリティー **27** No.06, 27–30 (2012).

9. Y. Todate, R. Fujie and T. Odagaki
"Self-organization of plutonomy in a fair competitive society", Acta Physica Polonica A **129** (5), 937–940 (2016).

10. T. Odagaki and A. Ishifuku
"Self-organization of extreme inequalities in a competitive society", Acta Physica Polonica A**133**, 1459–1464 (2018).

11. 小田垣孝
"新型コロナウイルスの蔓延に関する一考察" , 物性研究・電子版 **8** No.2, 082101-1–10 (2020).

12. T.Odagaki
"Analysis of the outbreak of COVID-19 in Japan by SIQR model", Infectious Disease Modelling, **5**, 691–698 (2020).

13. 小田垣孝
"新型コロナウイルスの第 3 波に備える" , コロナ世を生き抜く技とは （福工大土曜談話会編、花書院 2020 年 10 月) p. 100–103.

14. T.Odagaki
"Exact Properties of SIQR model for COVID-19", Physica A**564**, 125564-1–9 (2021).

15. T.Odagaki
"Self-organized wavy infection curve of COVID-19", Scientific Reports (Springer Nature), **11**, 1936-1–6(2021).

16. T.Odagaki
"Self-organization of oscillation in an epidemic model for COVID-19", Physica A**573**, 125925-1–5 (2021).

17. T.Odagaki and R. Suda
"Classification of the Infection Status of COVID-19 in 190 Countries", J. Clin. Trials, **11), 472-1–5 (2021).**

18. **T. Odagaki**
"Estimation of the onset rate and the number of asymptomatic patients of COVID-19 from the proportion of untraceable patients", Epidemiology and Public Health Research (Open Acess) 2(1), 1–5 (2022).

19. **T. Odagaki**
"New compartment model for COVID-19", Scientific Reports, 13, 5409 (5pp)(2023).

[VI] その他（ソリトン、ソフトマターなど）
［主な成果］
○ ポテンシャルの壁中の電子の異常分極の存在を示した
○ 重力場中の少数粒子系の統計力学の構造を明らかにした
○ 調和格子で接合した二つの戸田格子において、ソリトンの共鳴透過と遅延透過があることを示した ［論文２ 1 は IOP Select に選ばれている
○ ゴムの断熱伸張において、初期過程で温度が降下する現象を説明するモデルを提出した

1. T. Odagaki and K. Tani
"Photon Pumped Antiferromagnetic Magnon Instability",Phys. Letters **36A**, 399–400 (1971)

2. T. Odagaki
"Photon Pumped Spin Wave Instability in Rutile-type Antiferromagnets", J. Phys. Soc. Jpn. **35**, 40–46 (1973)

3. T. Odagaki
"Photon Pumped Spin Wave Instability in Rutile-type Antiferromagnets II", J. Phys. Soc. Jpn. **35**, 1343–1345 (1973)

4. D. Nguyen and T. Odagaki
"Quantum and Classical Electrons in a Potential Well with Uniform Electric Field", Am. J. Phys. **55**, 466–469 (1987)

5. T. Odagaki
"Anomalous displacement of excitons in a quantum well", Phys. Rev. **B36** 7653–7655 (1987)

6. Ashok Puri, J. G. Sun and T. Odagaki
"Anomalous polarization of an electron in a finite quantum well", Solid State Commun., **70** 907–10 (1989)

7. A. M. Kan'an, A. Puri and T. Odagaki
"Double Barrier Resonant Tunneling Device with Selectively Applied Field in the Well", Solid State Commun. **86**, 113–117 (1993)

8. A. M. Kan'an, A. Puri and T. Odagaki
" Transmission of an obliquely incident electron wave through GaAs–$Al_xGa_{1-x}Al$ structures: Application to an electron filter", J. Appl. Phys. **74**, 1–5 (1993)

9. A. Rosa, A. Puri, J. E. Murphy and T. Odagaki
"Charge trapped in biased double barrier heterostructures", J. Appl. Phys. **75**, 5196–204 (1994)

10. K. Kaneda and T. Odagaki
"Two-scale relation in one-dimensional crystals and wavelets", J. Phys. A: Math. Gen. **28** 4389–4406 (1995)

11. T. Odagaki and H. Kawai
"Anomalous polarization and tunneling of an electron in a quantum well", Physica B **239**, 141–143 (1997)

12. Y. Terada, H. Maeda and T. Odagaki
"Surface energy of ionized-neutral DDAO micelles", J. Phys. Chem. B **101**, 5784–5788 (1997)

13. Y. Terada, H. Maeda and T. Odagaki
"Effects of hydrogen bonding on the surface energy of ionic-neutral DDAO micelles", Prog. Coll. Poly. Sci. **106**, 83–85 (1997)

14. T. Odagaki and H. Kawai
"Particles in a gravitational field", Am J. Phys. **66**, 721–3 (1998)

15. Y. Kubota and T. Odagaki
"Propagation of solitons in the Toda lattice with an impure segment", Phys. Rev. E**61**, 3133–3138 (2000)

16. K. Kim, G. H. Kim, J. R. Lee, J. S. Choi, Y. S. Kong, B. I. Henry, M. K. Yum and T. Odagaki
"Multifractal Measures in Fractional Iterative Maps", Fractals **10**, 229–233 (2002)

17. K. Kim, Y. S. Kong, T. Odagaki and B. I. Henry
"Chaotic Features on Iterative Maps", J. Kor. Phys. Soc. **40**, 1023-1026 (2002)

18. K. Kim, Y. S. Kong, B. I. Henry and T. Odagaki
"Chaotic characteristics in fractional iterative maps", Physica A, **315**, 40–44 (2002)

19. Y. Kubota and T. Odagaki
"Numerical study of soliton scattering in inhomogeneous optical fibers",
Phys. Rev. E**68**, 026603-1–9 (2003)

20. Y. Kubota and T. Odagaki
"Resonant transmission of a soliton across an interface between two Toda lattices" Physical Review E**71**, 016605-1–5 (2005)

21. S.-M. Yoon, Kyungsik Kim and T. Odagaki
"Dynamical Minority and Majority Games in Korean Bond Futures Excahnge Market", J. Phys. Soc. Jpn. **75**, 015003 (2006) (2 pages).

22. Y. Kubota and T. Odagaki
"Delay in a soliton transmission across an interface between two Toda lattices", J. Phys. A: Math. Gen. **39**, 12343–12353 (2006)

23. Y. Kubota and T. Odagaki
"Logic gates based on soliton transmission in the Toda lattice", Advances in Applied Physics, **1**, no. 1, 29 – 38 (2012).

24. S. Matsumoto and T. Odagaki
"Theoretical Study of Discharge in a Nonlinear Medium", J. Phys.Soc. Jpn. **88**, 034704-1–7 (2019).

25. T. Odagaki
"Unusual Mechanocaloric Property of Rubber", J. Phys. Soc. Jpn. **92**, 053001 (3pp)(2023).]

その他の業績

[教育・随筆]

1. 小田垣 孝
"物理をする人さまざま" , 日本物理学会誌 **54**, 461–462 (1999)

2. 小田垣 孝
"基礎科学のための数学的手法", 大学教育, No. 7, 39–41 (2001)

3. 小田垣 孝
"アカデミックアドバイザー—物理学科 1997 年入学制の記録—", Radix, No. 29, 18–19 (2001)

4. 小田垣孝
"物理学の目で見る日頃のできごと (第一話): 覆水盆に返らず", 刑政 112 巻 12 号、92–94 (2001)

5. 小田垣孝
"物理学の目で見る日頃のできごと (第二話): 世の中は狭い", 刑政 113 巻 1 号、108–110 (2002)

6. 小田垣孝
"物理学の目で見る日頃のできごと (第三話): 大は小を兼ねる", 刑政 113 巻 2 号、114–116 (2002)

7. 小田垣孝
"物理学の目で見る日頃のできごと (第四話): 悪事千里を走る", 刑政 113 巻 3 号、98–100 (2002)

8. 小田垣孝
"物理学の目で見る日頃のできごと (第五話): ざるに水", 刑政 113 巻 4 号、106–108 (2002)

9. 小田垣 孝
"インターネット時代の教養教育", 九州大学教育情報, No **11**, 1–3 (2003)

10. 小田垣 孝
“統計力学のためのバーチャルラボラトリーの開発–(2+1) 次元の講義”, 大学の物理教育 **10**, 159–162 (2004)

11. 小田垣 孝
“大学教育におけるブリッジ科目の開発”, 大学教育, No. 11, 27–32 (2005)

12. 小田垣 孝
“これからの科学者養成に期待すること”, シンポジウム「理系 AO 入試を通じた高校と大学の接続」報告書　(神戸大学発達科学部）p. 9–14 (2006)

13. 小田垣　孝
“四〇年目の大学解体ー国立大学法人化を検証するー”, 世界 **811** (2010 年 12 月, 岩波書店) 256–269.

14. 小田垣　孝
“独創性の岐路の中で–研究者を目指す人たちへ–”, 物性研究 **95** No.6, 650-657 (2011).

15. 小田垣　孝
“太陽エネルギー循環社会を目指そう” , 物性研究・電子版 **1** No.1, 011801 (2012)(8 ページ).

16. 小田垣　孝
“科学者の責任－新しい科学パラダイムのためにー”, 科学 **82** No.5, 0557–0562(2012).

17. 小田垣　孝
“研究不正の深層” , 物性研究・電子版 **5** No.1, 051801 (2016)(8 ページ).

18. 小田垣 孝
“大学の使命と利益”, 科学 **86** No.4, 364–367 (2016)

19. 小田垣 孝
“此岸と彼岸の間で”, 日本物理学会誌 **73** No. 10, 729–730 (2018).

20. 小田垣孝
“秩序・無秩序現象の計算機実験–50 年前に考えられたこと”, (歴史の小径) 日本物理学会誌 **74** No. 8, 568–569 (2019).

[総説・解説]

1. 小田垣　孝
“格子気体模型による Super-Critical Fluid の金属ー非金属転移”, 物性研究 **19**, 272–282(1972)

2. 小田垣　孝
“過臨界流体水銀における金属ー非金属転移”, 物性研究 **21**, 87–102 (1973)

3. 小田垣　孝
“浸透理論への誘い”, 日本物理学会誌 **34**, 434–442 (1979)

4. 小田垣　孝
“浸透理論ー動的な取扱いー”, 月刊フィジクス **7** No. 4, 250–255 (1986)

5. 小田垣　孝
“随機過程伝導の理論 — CTRW 法と CMA 法—”, 月刊フィジクス **7** No. 4, 256–262 (1986)

6. 樋渡　保秋, 宮川　博夫, 小田垣　孝
“ガラス転移の擬似動的臨界現象”, 日本物理学会誌 **46** 90–97 (1991)

7. H. Hiwatari, H. Miyagawa and T. Odagaki
“Dynamical Singularities near the Liquid-Glass Transition: Theory and Molecular Dynamics Study”, Solid State Ionics **47** 179–222 (1991)

8. Y. Hiwatari, J. Matsui, T. Muranaka and T. Odagaki
"Molecular-Dynamics Study of Supercooled Liquids and the Theory of the Glass Transition", in *Computational Physics as a New Frontier in Condensed Matter Research*, edited by H. Takayama, M. Tsukada, H. Shiba, F. Yonezawa, M. Imada and Y. Okabe (The Physical Society of Japan, 1995) p. 329–339

9. 松井淳, 小田垣 孝
"液体-ガラス転移近傍にみられる遅いダイナミックスのコール-コール解析", 高分子論文集 **53**, 678–684 (1996)

10. 小田垣 孝
"ガラス転移点近傍の動的特異性", まてりあ **35**, 1239–1244 (1996)

11. 小田垣 孝
" ガラス転移の理論とシナリオ", 固体物理 **33**, 489–497 (1998)

12. 小田垣 孝, 辻口雅
"階級社会の発生を物理学で捉える", 科学（岩波書店）, **75**, 1028–1032 (2005)

13. 小田垣 孝
"ガラス転移の自由エネルギーランドスケープ描像", 波紋 **16**, 36–39 (2006)

14. 小田垣　孝
"ガラス転移の新しい描像", 冷凍 **81**, 872–875 (2006)

15. 田川文隆、小田垣孝
"ガラス形成物質における非線形交流比熱の理論", 熱測定 **35**, 244–252 (2008)

16. 小田垣　孝
"99% の悲劇－プルトノミー社会は何故生まれるのかー", パリティー **27** No.06, 27–30 (2012).

17. 小田垣 孝
"ガラス転移の自由エネルギーランドスケープ理論と構造エントロピー", 熱測定 **43**(2), 80–84 (2016)

18. T. Odagaki
'Non-equilibrium Statistical Mechanics Based on the Free Energy Landscape and Its Application to Glassy Systems", Journal of the Physical Society of Japan **86**, 082001–1-13 (2017).

19. 小田垣孝
"不規則媒質中の波動伝播におけるコヒーレント波の考え方", 日本物理学会誌, **78**, 45-46(2023).

[プロシーディングズ]

1. M. Lax and T. Odagaki
"Coherent Medium Approach to Hopping Conduction", in *Proceedings of the Conference on Macroscopic Properties of Disordered Media*, Lecture Notes in Physics Vol. 154, eds. R. Burridge, S. Childress and G. Papanicolaou (Springer, New York, 1982), 129–136.

2. T. Odagaki and M. Lax
"Hopping Conduction in One-Dimensional Random Chains", in *Proceedings of the International Conference on Low-Dimensional Conductors*, Mol. Cryst. Liq. Cryst. Vol. 85, eds E. Conwell and A. Epstein (Gordon and Breach, New York, 1982) 129–136.

3. M. Lax and T. Odagaki
"Hopping conduction from Multiple Scattering Theory and Continuous Time Random Walk to the Coherent Medium Approximation", in *Random Walks and Their Applications in the Physical and Biological Sciences*, AIP Conference Proceedings No. 109, eds M. F. Shlesinger and B. J. West (American Institute of Physics, New York, 1984) 133–154.

4. T. Odagaki
"Classical and Quantum Ants in a Labyrinth", in *Transport and Relaxation in Random Materials*, eds J. Klafter, R. J. Rubin and M. F. Shlesinger, (World Scientific, Singapore, 1986), 278–291.

5. S. Miyazima, T. Odagaki and S. Miyashita
"Ising spin system on Penrose lattice", Suppl. Trans. JIM **29** 481–484 (1988).

6. T. Odagaki and Y. Hiwatari
"Stochastic Model for a Glass Transition", Proceedings of the 7th International Conference on LIQUID AND AMORPHOUS METALS – LAM-7, edited by H. Endo, (Elsevier, Amsterdam) J. Non-Cryst. Solids **117/118** 887–889 (1990).

7. Y. Hiwatari and T. Odagaki
"Stochastic Dynamics of Atoms near a Glass Transition Point", Proceedings of the Yamada Conference on Strongly Coupled Plasma Physics, edited by S. Ichimaru, (Elsevier, Amsterdam, 1990) 163–166.

8. T. Odagaki
"Hyperinflation in Quasi-periodic Chains", Proceedings of China-Japan Seminar "Quasicrystals" edited by K. H. Kuo and T. Ninomiya (World Scientific, Singapore, 1991) 339–346.

9. 小田垣　孝
"アモルファス系の格子模型", 物性研究 **57**, 765–774 (1991).

10. T. Odagaki and Y. Hiwatari
"Stochastic dynamics in a supercooled fluid", Proceedings of First Tohwa University International Symposium on Slow Dynamics in Condensed Matter, edited by K. Kawasaki, M. Tokuyama and T. Kawakatsu (AIP, New York, 1992) 115–121.

11. 小田垣　孝, 松井　淳, 樋渡　保秋
"過冷却液体の遅い緩和の理論", 物性研究, **59**, 587-590 (1993).

12. 松井　淳, 小田垣　孝, 樋渡　保秋
"過冷却液体の遅い緩和過程", 物性研究, **59**, 591-594 (1993).

13. T. Odagaki
"Hyperinflation and self-similarity in quasiperiodic one-dimensional lattices", Symmetries in Science VII, edited by B. Gruber and T. Otsuka (Plenum, New York, 1993) pp. 457–464 .

14. T. Odagaki, J. Matsui, K. Uehara and Y. Hiwatari
"The role of molecular dynamics simulations for the study of slow dynamics", Mole. Sim. **12**, 299–304 (1994).

15. J. Matsui, H. Miyagawa, T. Muranaka, K. Uehara, T. Odagaki and Y. Hiwatari
"Calculation of the generalized susceptibility for a highly supercooled fluid through molecular dynamics simulation", Mole. Sim. **12**, 305-316 (1994).

16. 松井　淳, 樋渡　保秋, 小田垣　孝
"過冷却液体の遅い緩和の理論と MD シミュレーション", KEK Proceedings 93-14, edited by M. Arai, K. Shibata and H. Ikeda (Nat. Lab. High Ener. Phys., 1994) pp.114–127.

17. 小田垣　孝, 樋渡　保秋
“ガラス転移の遅い緩和の理論”, 物性研究, **62**, 327-331 (1994).

18. 樋渡　保秋, 松井　淳, 小田垣　孝
“超長時間分子動力学シミュレーションによる一般化された感受率 $\chi(\omega)$ の計算”, 物性研究, **62**, 332-340 (1994).

19. 和智　勇治, 小田垣　孝
“ソフトパーコレーション系のダイナミックス”, 物性研究, **62**, 361-364 (1994).

20. 和智　勇治, 小田垣　孝
“ソフトパーコレーションにおけるユニバーサリティーの破れ”, 物性研究, **63**, 477-480 (1995).

21. T. Odagaki, J. Matsui and Y. Hiwatari
“Glass Transition Singularities and Slow Relaxation”, in *MRS Proceedings vol. 367 “Fractal Aspects of Materials”*, edited by F. Family, P. Meakin, B. Sapoval and R. Wool, (MRS, 1995), p. 337–346.

22. 小田垣　孝
“ガラス転移とそのダイナミックス”, 物性研究, **64**, 504–509 (1995).

23. T. Odagaki, J. Matsui and Y. Hiwatari
“On the glass transition singularities and slow dynamics”, Physica A **224**, 74–83 (1996).

24. T. Odagaki
“A unified theory for the glass transition singularities”, Proceedings of the First Tohwa University Statistical Physics Meeting, edited by M. Tokuyama, Bussei Kenkyu **66**, 516–519 (1996).

25. S. Toyofuku and T. Odagaki
“Percolation process in a model granular system in two-dimensions”, Materials Science and Engineering A **217**, 381–383 (1996).

26. T. Odagaki
“Non-ergodicity and non-Gaussianity in vitrification process”, in *Dynamcics of Glass Transition and Related Topics* editted by T. Odagaki, Y. Hiwatati and J. Matsui (Prog. Theor. Phys. Kyoto), 9 – 12 (1997).

27. M. Higuchi and T. Odagaki
“Ideal three-mode model for the dynamics of supercooled liquids”, in *Dynamcics of Glass Transition and Related Topics* editted by T. Odagaki, Y. Hiwatati and J. Matsui (Prog. Theor. Phys. Kyoto), 313 – 316 (1997).

28. M. Fujisaki, J. Matsui and T. Odagaki
“Molecular dynamics study of a supercooled binary soft-sphere system: Calculation of the genelarized susceptibility in supercooled and glassy states”, in *Dynamcics of Glass Transition and Related Topics* editted by T. Odagaki, Y. Hiwatati and J. Matsui (Prog. Theor. Phys. Kyoto), 317–320 (1997).

29. T. Odagaki, J. Matsui, M. Fujisaki and M. Higuchi
“A unified theory for the glass transition dynamics and its singularities”, MRS Proceedings **455**, 163–169 (1997).

30. J. Matsui, M. Fujisaki and T. Odagaki
“Separation of diffusive jump motion and trapped motion of atoms in a glass forming process via molecular dynamics simulation”, MRS Proceedings **455**, 285–291 (1997).

31. Y. Terada, H. Maeda and T. Odagaki
“Phase Diagram of Surfactan-Water System”, in *Statistical Physics*(Proceedings of the 2nd Tohwa University International Meeting) edited by M. Tokuyama and I. Oppenheim (World Scientific, Singapore, 1998), 72.

32. J. Matsui and T. Odagaki
"Molecular-Dynamics Analysis of the Fast Process in Classical Liquid", in *Statistical Physics*(Proceedings of the 2nd Tohwa University International Meeting) edited by M. Tokuyama and I. Oppenheim (World Scientific, Singapore, 1998), 73.

33. T. Odagaki, M. Kawasaki, M. Cáceres and H. Matsuda
" Theory of Stochastic Dynamics in Finite Random Media with an Oscillatory Boundary Condition", in *Statistical Physics*(Proceedings of the 2nd Tohwa University International Meeting) edited by M. Tokuyama and I. Oppenheim (World Scientific, Singapore, 1998), 171–174.

34. M. Kawasaki and T. Odagaki
"Theoretical Study of Boundary Perturbation Method for Transport Process in a random Medium", in *Statistical Physics*(Proceedings of the 2nd Tohwa University International Meeting) edited by M. Tokuyama and I. Oppenheim (World Scientific, Singapore, 1998), 192.

35. Y. Hara and T. Odagaki
"Non-Universal Critical Exponent of the Diffusion Coeeficient for the Soft-Percolation Process", in *Statistical Physics*(Proceedings of the 2nd Tohwa University International Meeting) edited by M. Tokuyama and I. Oppenheim (World Scientific, Singapore, 1998), 200.

36. J. Matsui, M. Fujisaki and T. Odagaki
"The self-part of the generalizes susceptibility of a supercooled binary soft-sphere system", J. Non-Cryst. Solids, **235-237**, 335–9 (1998).

37. T. Odagaki, J. Matsui and M. Higuchi
"Dynamical characteristics of the vitrification process of supercooled liquids", J. Phys.: Condens. Matter **10**, 11491–11498 (1998).

38. T. Odagaki, H. Kawai and S. Toyofuku
"Percolation in correlated systems", Physica A **266**, 49–54 (1999).

39. Y. Hara and T. Odagaki
"Non-universal behavior in the soft-percolation system", Physica A **266**, 67–71 (1999).

40. T. Odagaki and J. Matsui
"Non-Gaussianity in the Frequency Domain", AIP Conference Proceedings 469 edited by M. Tokuyama and I. Oppenheim, 484–489 (1999).

41. J. Matsui and T. Odagaki
"The frequency and wave-number dependence of the generalized susceptibility in a supercooled fluid", AIP Conference Proceedings 469 edited by M. Tokuyama and I. Oppenheim, 567–8 (1999).

42. Y. Terada, H. Maeda and T. Odagaki
"Phase Diagram of Surfactant-Water systems in two Dimensions", Report of International Symposium on "Physical Aspects of Amphiphilic Colloids", edited by Y. Suezaki, 57–61 (2001).

43. 小田垣孝、田尾聡明、吉森明
"ガラス転移点近傍の比熱の異常について", KEK Proceedings 2001-27, 1–4 (2002).

44. 松井 淳，小田垣 孝
"ソフトコアガラスの CRR", KEK Proceedings 2001-27, 21–23 (2002).

45. 樋口 真理子，小田垣 孝，松井 淳
"二原子分子過冷却液体のジョハリ・ゴールドシュタイン過程", KEK Proceedings 2001-27, 78–80 (2002).

46. 池永 雅範，松井 淳，小田垣 孝
“ガラス転移点における協調領域の直接的測定”, KEK Proceedings 2001-27, 81–82 (2002).

47. 田川 文隆，松井 淳，小田垣 孝
“動的構造因子とノンガウシアンパラメーター”, KEK Proceedings 2001-27, 83–85 (2002).

48. 田尾 聡明，吉森 明，小田垣 孝
“非平衡系の比熱”, KEK Proceedings 2001-27, 86–89 (2002).

49. 久保田陽二, 小田垣孝
“非一様性をもつ光ファイバー中のソリトン伝播”, 九州大学応用力学研究所研究集会報告 No. 13ME-S4,75–80 (2002).

50. R. Ogata, T. Odagaki and K. Okazaki
“Percolation on disordered systems”, Proceedings of the First Saga Synchrotron Light Symposium, 23–24 (2002).

51. F. Tagawa and T. Odagaki
“Transition from Annealed to Quenched Dynamics”, AIP Proceedings “Slow Dynamics in Complex Systems”, edited by M. Tokuyama and I. Oppenheim, (AIP 2004), p. 709–710.

52. T. Odagaki, T. Okubo, R. Ogata, and K. Okazaki
“Packing and percolation of poly-disperse disc and spheres”, The Proceedings of Second COE Workshop on Sphere Packings ed. by E. Bannai (Kyushu University, 2005) 187–197.

53. F. Tagawa and T. Odagaki
“ Nonlinear Energy Response to Oscillating Temperature in the Free Energy Landscape Picture”, AIP Proceedings “Flow Dynamics: The Second International Conference on Flow Dynamics”, edited by M. Tokuyama and S. Maruyama, (AIP 2006), p. 184–187.

54. Takashi Yoshidome, Akira Yoshimori, and Takashi Odagaki
“Free energy landscape and CRR of glass-forming substance”, AIP Proceedings 832 “Flow Dynamics: The Second International Conference on Flow Dynamics” edited by M. Tokuyama and S. Maruyama, (AIP 2006), P.188–192

55. R. Fujie and T. Odagaki
“Effects of Superspreaders in Spread of Epidemic”, Diffusion Fundamentals II ed. S. Brandani, C. Chmelik, J. Körger and R. Volpe (Leipziger Universitätsverlag, Laipzig, 2007) p. 154–155.

56. 久保田陽二, 小田垣孝
“接合戸田格子にけるソリトンの異常透過”, 九州大学応用力学研究所研究集会報告 No. 19ME-S2,83–88 (2008).

57. T. Mizuguchi, T. Odagaki, M. Umezaki, T. Koumyou, and J. Matsui
“Glass Transition in a Spherical Monoatomic Liquid”, CP982, Complex Systems edited by M. Tokuyama, I. Oppenheim, and H. Nishiyama, (AIP 2008), P.234–237.

58. T. Ekimoto, T. Odagaki, and A. Yoshimori
“Separation of Dynamics in the Free Energy Landscape”, CP982, Complex Systems edited by M. Tokuyama, I. Oppenheim, and H. Nishiyama, (AIP 2008), P.211–214.

59. K. Maruyama. S. Hiroi(Sato), H. Endo, H. Hoshino, T.Odagaki, and F. Hensel
“The Packing of Helical and Zigzag Chains and Distribution of Interstitial Voids in Expanded Liquid Se near the Semiconductor to Metal Transition”, EPJ Web of Conferences **151**, 01003–1-6 (2017).

[国際会議招待講演・招待座長]

1. T.Odagaki, N. Ogita and H. Matsuda
"Percolation Transition and Metal-Insulator Transition", 2nd Soviet Conference of Metal-Dielectric Transition, Lvov, June 22–24, 1977

2. T. Odagaki
"Hopping Conduction in One-dimensional Chains", Conference on
Macroscopic Properties of Disordered Media, New York, June 1–3, 1981

3. M. Lax and T. Odagaki
"Multiple Scattering, CPA, and CTRW Treatment of Hopping Conductivity", Conference on Random Walk Models in the Physical and Biological Sciences, Gaithersburg, June 18 – July 1, 1982

4. T. Odagaki
"Classical and Quantum Ants in a Labyrinth", Conference on Transport and Relaxation Processes in Random Materials, Gaithersburg, October 15–17, 1985

5. T. Odagaki and Y. Hiwatari "Stochastic dynamics in a supercooled fluid", Conference on Slow Dynamics in Condensed Matter, Fukuoka, November 4–8, 1991

6. T. Odagaki
"Hyperinflation and self-similarity in quasi-periodic one-dimensional lattices", Symmetry in Science VII, Nakajo, August 29–31, 1992

7. 小田垣 孝, 樋渡保秋
"ガラス転移とスローダイナミックス", 日本物理学会第 49 回年会, 福岡工業大学, 1993 年 3 月 28 日– 4 月 1 日

8. T. Odagaki and Y. Hiwatari
"Glass transition and slowdynamics", MRS Fall Meeting, Boston November 28 – December 2, 1994

9. T. Odagaki
"On the dynamical singularities of glass transition", Satellite Meeting to STATPHYS-19 "Dynamics of Complex Systems", Calcutta, August 6–11, 1995

10. T. Odagaki
"On the glass transition singularities", The First Thowa University Statistical Physics Meeting, Fukuoka, November 7–10, 1995

11. T. Odagaki
"Dynamical transitions in supercooled liquids", International Symposium on Anomalous Relaxation in Complex Fluids, Kyoto, November 18–20, 1996

12. T. Odagaki
"A unified theory for the glass transition dynamics and its singularities", MRS Fall Meeting, Boston, December 2–6, 1996

13. T. Odagaki, J. Matsui, M. Fujisaki and M. Higuchi
"Molecular dynamics simulation study of the glass transition of a binary soft-sphere system", 3rd International Discussion Meeting on Relaxations in Complex Sytems, Vigo, June 30 – July 11, 1997

14. T. Odagaki
"A unified view of the dynamical aspects of vitrification process", 7th International Conference on the Structure of Non-Crystalline Materials, Sardegna, September 15–19, 1997

15. T. Odagaki, M. Kawasaki, M. Caceres and H. Matsuda
"Theory of stochastic dynamics in finite random media with an oscillatory boundary condition", The 2nd Thowa University International Meeting on Statistical Physics, Fukuoka, November 4–7, 1997

16. T. Odagaki
"Glass Transition in an Ideal System", Oji International Seminar "Quest for New Physical Phase under Extreme Conditions", Tomakomai, May 31 – June 5, 1998

17. T. Odagaki
"Percolation in correlated systems", International Conference on Percolation and Disordered Systems – Theory and Applications –, Giessen, July 14 – 17, 1998

18. T. Odagaki
"Random Walks in Complex Environments" One-day Symposium on Random Walks and Application, Juelich June 25, 1999

19. T. Odagaki and A. Yoshimori
"Microscopic Derivation of the Jump rate Distribution and Glass Transition", Workshop on Glass Transition, Trieste, September 15–18, 1999

20. T. Odagaki and A. Yoshimori
"Localization transition in the vitrification process", Wave Propagation and Electronic Structure in Disrdered Systems, Crete, June 15–17, 2000

21. T. Odagaki
"Dynamics and thermodynamic transition in nonequilibrium systems", 4th International Discussion Meeting on Slow Relaxation, Crete, June 17–23, 2001

22. T. Odagaki
"Johari-Goldstein Process in the supercooled state of a model diatomic liquid", 28th International Conference on Dynamical Properties of Solids, Kerkarade September 16 - 20, 2001

23. J. Matsui and T. Odagaki
"Observation of CRR by MD simulation - Cooperatively Rearranging Region -", Slow dynamics and glass transition, Bangalore, January 6 - 9, 2002

24. T. Odagaki
"On the thermodynamic anomaly at the glass transition", ROMA2002 Unifying Concepts in Glass Physics, Roma, February 27 - March 2, 2002

25. T. Odagaki
"Cooperatively and simultaneously rearranging regions", Unifying Concepts in Glass Physics III, Bangalore, June 28-July 1, 2004

26. T. Odagaki
"New Physics -Connectivity and Landscapes", Special Invited Seminar, Department of Physics, Pukyong National University, June 4, 2004

27. T. Odagaki
"Percolation Theory and fractals in complex systems", Statistical Physics Seminar, Institute of Basic Siences, Kyongsung University, June 3, 2004

28. T. Odagaki and T. Okubo
"Packing and percolation of poly-disperse spheres", The Second COE Workshop on Sphere Packings, Fukuoka, May 30–June 3, 2005

29. T. Odagaki
"Free energy landscape approach to glass transition", 5th International Discussion Meeting on Relaxation in Complex Systems, Lille, July 7–13, 2005

30. T. Odagaki
"Free energy landscape approach to glass transition", Recent progress in glassy physics, Paris, September 27–30, 2005

31. T. Odagaki
"Dancing in the Landscape", International Symposium on Molecular Simulations 2006 Kanazawa University, Kanazawa, March 24–25, 2006

32. T. Odagaki
"Fast and slow dynamics in the free energy landscape", Kia Ngai Festival:International Symposium on supercooled liquids and other complex systems, Pisa, September 16, 2006

33. T. Odagaki
Invited Session Chairman, Diffusion Fundamentals II, l'Aquila, August 26–30, 2007

34. T. Odagaki
"Self-organization of hierarchy and villages", 9th Japan-Slovenia Seminar on Nonlinear Science, Osaka City University, Osaka, November 12-14,2007

35. T. Odagaki
"Stochastic dynamics in the free energy landscape and glass transition", International Workshop on Modeling anomalous diffusion and relaxation, Institute for Advanced Studies, Jerusalem, March 23-28, 2008

36. T. Odagaki
"Free energy landscape theory of glass transition and entropy", International Symposium on Glasses and Entropy, Trencin, Slovakia (EU) June 22-26, 2008.

37. T. Odagaki
"Self-organization of hierarchy and villages", International Conference in Statistical Physics Sigma Phi 2008 Orthodox Academy of Crete, Kolymbari, Chania, Greece July 14-18, 2008.

38. T. Odagaki
"Human dynamics and self-organization of hierarchy and villages" APFA7 and Tokyo Tech - Hitotsubashi Interdisciplinary Conference Tokyo-Japan, 1-5 March, 2009

39. T. Odagaki
"Free energy landscape theory of glass transition" 6th International Discussion Meeting on Relaxation in Complex Systems, Rome, August 31– September 4, 2009

40. T. Odagaki
"Cost-sensitive self-organization of social hierarchy in competitive societies" SOCIOPHYSICS: do humans behave like atoms? Paris, November 14-16, 2011

41. T. Odagaki
"Non-linear dielectric responses of a model glass former under oscillating temperature", International Symposium on Glasses and Entropy, Wildbad Kreuth, Germany, June 25-27, 2012

42. T. Odagaki
"Non-linear responses of glass formers under oscillating temperature", 10th Pacific Rim Conference on Ceramic and Glass Technology (Hotel Del Coronado, San Diego, CA, USA June 2-7,2013)

43. T. Odagaki and Y. Saruyama
"Non-linear dielectric responses of glass formers under temperature modulation", 7th international Discussion Meeting on Relaxations in Complex Systems" （Barcelona July 21-26, 2013)

44. T. Odagaki
"What can we know from the free energy landscape?" Materials Science & Technology 2013 [Cooper Award Session] (Montreal, Oct. 26-31, 2013)

45. T. Odagaki
"Self-organization of extreme hierachies in competitive societies", 8th Polish Symposium on Econo- and Sociophysics (Rzeszow, Poland, Nov. 4-6, 2015)

46. T. Odagaki, T. Ishida and Y. Saruyama
"Temperature modulation spectroscopy and the relaxation of the free energy landscape" 8th international Discussion Meeting on Relaxations in Complex Systems（Hotel Golebiewski in Wisla, Wisla, Poland 23-28,July 2017)

47. T. Odagaki
"Response of the Free Energy Landscape to Temperature Modulation and Aging" The 18th International Conference on Liquid and Amorphous Metals (September 12, 2022, online)

48. T. Odagaki and T. Mizuguchi
“Free-energy Landscape Approach to the Adam-Gibbs Relation and the Cooperatively Rearranging Region”9th Int. Dis. Meet. Rel. Comp. Syst. (Chiba, Japan 12-18, August 2023).

[再掲された論文]

1. T. Odagaki and D. Nguyen
“Electronic and vibrational spectra of two-dimensional quasi-crystals”, Phys. Rev. **B33**, 2184–2190 (1986); erratum, Phys. Rev. **B34**, 5929–5930 (1986): reprinted in *The Physics of Quasicrystals*, edited by P. J. Steinhardt and S. Ostlund, World Scientific, Singapore (1987).