

熱・エントロピー科学研究センター業績リスト(2021)
Publications from
the Research Center for Thermal and Entropic Science

[Articles are classified according to original paper (mark O), review article (R), book (B), translation (T) and miscellaneous (M). An asterisk attached to mark-letter indicates that the article has been published in Japanese.]

- O-1 Large-Amplitude Thermal Vibration-Coupled Valence Tautomeric Transition Observed in a Conductive One-Dimensional Rhodium–Dioxolene Complex
M. Mitsumi, Y. Komatsu, M. Hashimoto, K. Toriumi, Y. Kitagawa, Y. Miyazaki, H. Akutsu, and H. Akashi
Chem. Eur. J. **27**(9), 3074–3084 (2021).
- O-2 Dipole Fluctuation and Structural Phase Transition in Hydrogen-Bonding Molecular Assemblies of Mononuclear Cu^{II} Complexes with Polar Fluorobenzoate Ligands
K. Takahashi, Y. Miyazaki, S. Noro, M. Nakano, T. Nakamura, and T. Akutagawa
Dalton Trans. **50**(39), 13680–13685 (2021).
- O-3 Low-Temperature Heat Capacity Anomalies in Ordered and Disordered Phases of Normal and Deuterated Thiophene
Y. Miyazaki, M. Nakano, A. I. Krivchikov, O. A. Koroyuk, J. F. Gebbia, C. Cazorla, and J. Ll. Tamarit
J. Phys. Chem. Lett. **12**(8), 2112–2117 (2021).
- O-4 Impact of the Air Atmosphere on Photoinduced Chain Polymerization in Self-Assembled Monolayers of Diacetylene on Graphite
D. Takajo and K. Sudoh
Langmuir **37**(19), 6002–6006 (2021).
- O-5 Water-Oriented Magnetic Anisotropy Transition
S.-Q. Su, S.-Q. Wu, M. Hagihala, P. Miao, Z. Tan, S. Torii, T. Kamiyama, T. Xiao, Z. Wang, Z. Ouyang, Y. Miyazaki, M. Nakano, T. Nakanishi, J.-Q. Li, S. Kanegawa, and O. Sato
Nat. Commun. **12**, 2738 (2021) (9 pages).

- O-6 Comprehensive Thermodynamic Study of Three Co(II)- and Fe(II)-Based Octacyanonionobates
R. Pełka, P. Konieczny, Y. Miyazaki, Y. Nakazawa, T. Wasiutyński, A. Budziak, D. Pinkowicz, and B. Sieklucka
Phys. Rev. B **104**(21), 214428 (2021) (18 pages).
- O-7 Chiral Metal Down to 4.2 K – a BDH-TTP Radical-Cation Salt with Spiroboronate Anion B(2-chloromandelate)₂[−]
T. J. Blundell, M. Brannan, H. Nishimoto, T. Kadoya, J. Yamada, H. Akutsu, Y. Nakazawa, and L. Martin
Chem. Commun. **57**(44), 5406–5409 (2021).
- O-8 Fermi Surface Structure and Isotropic Stability of Fulde-Ferrell-Larkin-Ovchinnikov Phase in Layered Organic Superconductor β''-(BEDT-TTF)₂SF₅CH₂CF₂SO₃
S. Sugiura, H. Akutsu, Y. Nakazawa, T. Terashima, S. Yasuzuka, J. A. Schlueter, and S. Uji
Crystals **11**(12), 1525 (2021) (10 pages).
- O-9 Structural, Magnetic and Mössbauer Spectroscopic Studies of the [Fe(3-bpp)₂](CF₃COO)₂ Complex: Role of Crystal Packing Leading to an Incomplete Fe(II) High Spin ⇌ Low Spin Transition
K. H. Sugiyarto, D. Onggo, H. Akutsu, V. R. Reddy, H. Sutrisno, Y. Nakazawa, and A. Bhattacharjee
CrystEngComm **23**(15), 2854–2861 (2021).
- O-10 Exceptionally High Temperature Spin Crossover in Amide-Functionalised 2,6-Bis(pyrazol-1-yl)pyridine Iron(II) Complex Revealed by Variable Temperature Raman Spectroscopy and Single Crystal X-Ray Diffraction
M. Attwood, H. Akutsu, L. Martin, T. J. Blundell, P. Le Maguere, and S. S. Turner
Dalton Trans. **50**(34), 11843–11851 (2021).
- O-11 Thermodynamic Measurements of Doped Dimer-Mott Organic Superconductor under Pressure
Y. Matsumura, S. Yamashita, H. Akutsu, and Y. Nakazawa
Fiz. Nizk. Temp. **48**, 56 (2021) (6 pages).
- O-12 Asymmetric N-Heteroacene Tetracene Analogues as Potential n-Type Semiconductors
M. Attwood, D. K. Kim, J. H. L. Hadden, A. Maho, W. Ng, H. Wu, H. Akutsu, A. J. P. White, S. Heutz, and M. Oxborrow
J. Mater. Chem. C **9**(47), 17073–17083 (2021).

- O-13 Magnetic Properties of $S = 1/2$ Distorted Kagome Antiferromagnet $\text{CdCu}_3(\text{OH})_6\text{Cl}_2$ with Low-Symmetry Orbital Arrangement
H. K. Yoshida, N. Noguchi, Y. Ishii, M. Oda, J. Chen, K. Yamaura, S. Yamashita, Y. Nakazawa, T. Kida, Y. Narumi, and M Hagiwara
J. Phys. Soc. Jpn. **90**(4), 044714 (2021) (6 pages).
- O-14 Lattice and Charge Fluctuations in a Molecular Superconductors
T. Yamamoto, T. Naito, M. Uruichi, H. Akutsu, and Y. Nakazawa
J. Phys. Soc. Jpn. **90**(6), 063708 (2021) (5 pages).
- O-15 New Spin-Crossover Compounds Containing the $[\text{Ni}(\text{mnt})]$ Anion (mnt = Maleonitriledithiolate)
S. S. Turner, J. Daniell, H. Akutsu, P. N. Holton, S. J. Coles, and V. Schünemann
Magnetochemistry **7**(5), 72 (2021) (12 pages).
- O-16 First Molecular Superconductor with the Tris(Oxalato)Aluminate Anion, β'' -(BEDT-TTF) $_4(\text{H}_3\text{O})\text{Al}(\text{C}_2\text{O}_4)_3 \cdot \text{C}_6\text{H}_5\text{Br}$, and Isostructural Tris(Oxalato)Cobaltate and Tris(Oxalato)Ruthenate Radical Cation Salts
T. J. Blundell, M. Brannan, J. Mburu-Newman, H. Akutsu, Y. Nakazawa, S. Imajo, and L. Martin
Magnetochemistry **7**(7), 90 (2021) (12 pages).
- O-17 Structures and Properties of New Organic Molecule-Based Metals, $(\text{D})_2\text{BrC}_2\text{H}_4\text{SO}_3$ [D = BEDT-TTF and BETS]
H. Akutsu, Y. Koyama, S. S. Turner, and Y. Nakazawa
Magnetochemistry **7**(7), 91 (2021) (13 pages).
- O-18 Symmetry Change of d -Wave Superconductivity in κ -Type Organic Superconductors
S. Imajo, K. Kindo, and Y. Nakazawa
Phys. Rev. B **103**(6), L060508 (2021) (5 pages).
- O-19 Thermodynamic Evidence for the Formation of a Fulde-Ferrell-Larkin-Ovchinnikov Phase in the Organic Superconductor λ -(BETS) $_2\text{GaCl}_4$
S. Imajo, T. Kobayashi, A. Kawamoto, K. Kindo, and Y. Nakazawa
Phys. Rev. B **103**(22), L220501 (2021) (5 pages).
- O-20 Extraordinary π -Electron Superconductivity Emerging from a Quantum Spin Liquid
S. Imajo, S. Sugiura, H. Akutsu, Y. Kohama, T. Isono, T. Terashima, K. Kindo, S. Uji, and Y. Nakazawa
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- O-21 Electric Dipole Induced Bulk Ferromagnetism in Dimer Mott Molecular Compounds
R. Yoshimoto, S. Yamashita, H. Akutsu, Y. Nakazawa, T. Kusamoto, Y. Oshima, T. Nakano, H. M. Yamamoto, and R. Kato
Sci. Rep. **11**, 1332 (2021) (10 pages).
- O-22 Strongly Hydrogen-Bonded Schiff Base and Adjoining Polyene Twisting in the Retinal Chromophore of Schizorhodopsins
T. Shionoya, M. Mizuno, M. Singh, H. Kandori, and Y. Mizutani
Biochemistry **60**(41), 3050–3057 (2021).
- O-23 Regulatory Switching by Concerted Motions on the Microsecond Time Scale of the Oxygen Sensor Protein FixL
T. Yamawaki, M. Mizuno, H. Ishikawa, K. Takemura, A. Kitao, Y. Shiro, and Y. Mizutani
J. Phys. Chem. B **125**(25), 6847–6856 (2021).
- O-24 Resonance Raman Determination of Chromophore Structures of Heliorhodopsin Photointermediates
T. Urui, M. Mizuno, A. Otomo, H. Kandori, and Y. Mizutani
J. Phys. Chem. B **125**(26), 7155–7162 (2021).
- O-25 Chain Alignment of a Rigid Ring Polymer in the Lyotropic Liquid Crystal Phase: Cyclic Amylose Tris(*n*-butylcarbamate) in Tetrahydrofuran and Ethyl Lactate
D. Kabata, A. Ryoki, S. Kitamura, and K. Terao
Macromolecules **54**(23), 10723–10729 (2021).
- O-26 Kinetics of the Complex Formation of Silica Nanoparticles with Collagen
M. Otsubo and K. Terao
Polym. J. **53**(12), 1481–1484 (2021).
- R-1 Experimental Heat Capacity of Low-Dimensional Systems: Carbon Nanotubes and 1D Atomic and Molecular Chains of Adsorbates
M. Barabashko and Y. Nakazawa
Netsu Sokutei **48**(4), 164–170 (2021).
- B-1* 新基礎化学実験法 2021
宮崎裕司(大阪大学化学教育研究会編, 執筆分担) A5, 144 頁
学術図書出版社(2021 年 2 月 26 日発行).

- B-2* 物理化学の基本式 70
稲葉 章, B6, 184 頁
東京化学同人(2021 年 12 月 7 日発行).
- B-3* 化学便覧 基礎編 改訂 6 版
中澤康浩(日本化学会編, 執筆分担)B5, 1536 頁
丸善(2021 年 1 月発行).
- B-4* 動的粘弾性測定とそのデータ解釈事例
寺尾 憲(執筆分担)A4, 589 頁
技術情報協会(2021 年 12 月発行).
- M-1 Perspectives on Molecular Materials – A Tribute to Professor Peter Day
L. Martin, S. S. Turner, J. D. Wallis, H. Akutsu, and C. J. Gómez-García
Magnetochemistry 7(12), 152 (2022) (6 pages).
- M-2* たった 1 つの-CH 基の向きの違いで物性が変った
不斉中心を有する有機伝導体 β'' -(BEDT-TTF)₂(*rac*-および *S*-PROXYL-CONHCH₂SO₃)
の構造と物性の比較
坪 広樹
大阪大学低温センターだより **171**, 2–8 (2021).
- M-3* 音を奏でる気柱振動ヘリウム液面計
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- M-4* フロギストン 核スピンの超微細構造
中澤康浩
熱測定 **48**(4), 172–173 (2021).
- M-5* フロギストン 回転トンネル現象
中澤康浩
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