熱・エントロピー科学研究センター業績リスト（2024）
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 Octahedral Hexanuclear Rhenium Cluster Dimers Bridged by Pyrazine or 4,4′-Bipyridine with 23- and 24-Electron Configurations
T. Yoshimura, K. Nagata, and M. Nakano
Inorg. Chem. **63**(32), 14913–14923 (2024).

O-2 Elucidation of Electronic Structures of Mixed-Valence States Induced by dσ-π Charge Delocalization in Linear-Chain and Discrete Rhodium–Dioxolene Tetrameric Complexes
M. Mitsumi, R. Shintani, Y. Ooura, T. Tanaka, H. Mikasa, Y. Miyazaki, M. Nakano, and Y. Kataoka
Inorg. Chem. **63**(49), 23118–23130 (2024).

O-3 Exploring Magnetocaloric Effect of Coordination Polymer Based on Mn(II) and Nb(IV) by Relaxation Calorimetry
R. Pełka, Y. Miyazaki, Y. Nakazawa, D. Pinkowicz, and B. Sieklucka
J. Phys. Chem. Solids **192**, 112090 (2024) (7 pages).

O-4 Endo- and Exothermal Mechanocaloric Response in Rubbers
T. Matsuo and D. Takajo
J. Therm. Anal. Cal. (2024) in press.

O-5 Introduction of New Guest Molecules into BEDT-TTF Radical-Cation Salts with Tris(oxalato)ferrate
T. J. Blundell, E. K. Rusbridge, R. E. Pemberton, M. J. Brannan, A. L. Morritt, J. O. Ogar, J. D. Wallis, H. Akutsu, Y. Nakazawa, S. Imajo, and L. Martin
CrystEngComm **26**(14), 1962–1975 (2024).

O-6 Suppression of a Structural Phase Transition by an Orientational Disorder of Counter Anions in an Organic Conductor, β″-β″-(BEDT-TTF)$_2$ClC$_2$H$_4$SO$_3$
H. Akutsu, M. Uruichi, S. Imajo, K. Kindo, T. Masuta, H. Manabe, Y. Nakazawa, and S. S. Turner
Inorg. Chem. **63**(36), 16872–16877 (2024).

O-7 Diverse Charge Distributions in the Triangular Lattice Superconductor κ-(ET)2Cu[N(CN)2]I: Infrared and Raman Spectroscopic Insights
T. Yamamoto, Y. Nakamura, T. Naito, K. Konishi, M. Uruichi, K. Matsushita, and Y. Nakazawa
J. Phys. Soc. Jpn. **93**(12), 124701 (2024) (10 pages).

O-8 Direct Measurement of Magnetocaloric Effect (MCE) in Frustrated Gd-Based Molecular Complexes
Y. Zhang, T. Nomoto, S. Yamashita, H. Akutsu, N. Yoshinari, T. Konno, and Y. Nakazawa
J. Therm. Anal. Cal. (2024) in press.

O-9 Nonlinear Phenomena in Charge Transport Properties of a Hole-Doped Organic Spin-Liquid Compound
S. Yamashita, E. Yesil, L. Zhang, T. Nomoto, H. Akutsu, A. Krivchikov, and Y. Nakazawa
Low Temp. Phys. **50**(5), 372–378 (2024).

O-10 Charge and Valence Bond Orders in the Spin-1/2 Triangular Antiferromagnet
T. Yamamoto, T. Fujimoto, Y. Nakazawa, M. Tamura, M. Uruichi, Y. Ikemoto, T. Morikawa, H.-B. Cui, and R. Kato
Phys. Rev. B **110**(20), 205126 (2024) (10 pages).

O-11 BEDT-TTF Radical-Cation Salts with Tris(oxalato)chromate and Guest Additives
T. J. Blundell, J. O. Ogar, M. J. Brannan, E. K. Rusbridge, J. D. Wallis, H. Akutsu, Y. Nakazawa, S. Imajo, and L. Martin
RSC Adv. **14**(26), 18444–18452 (2024).

O-12 Structural Dynamics of the Heme Pocket and Intersubunit Coupling in the Dimeric Hemoglobin from *Scapharca inaequivalvis*
X. Gao, M. Mizuno, H. Ishikawa, S. Muniyappan, H. Ihee, and Y. Mizutani
J. Chem. Phys. **160**(16), 165102 (2024) (11 pages).

O-13 *Cis-Trans* Reisomerization Preceding Reprotonation of the Retinal Chromophore Is Common to the Schizorhodopsin Family: A Simple and Rational Mechanism for Inward Proton Pumping
T. Urui, K. Hayashi, M. Mizuno, K. Inoue, H. Kandori, and Y. Mizutani
J. Phys. Chem. B **128**(3), 744–754 (2024).

O-14 Chromophore–Protein Interactions Affecting the Polyene Twist and π-π* Energy Gap of the Retinal Chromophore in Schizorhodopsins
T. Urui, T. Shionoya, M. Mizuno, K. Inoue, H. Kandori, and Y. Mizutani
J. Phys. Chem. B **128**(10), 2389–2397 (2024).

O-15 Cooperative Protein Dynamics of Heterotetrameric Hemoglobin from *Scapharca inaequivalvis*
X. Gao, H. Ishikawa, M. Mizuno, and Y. Mizutani
J. Phys. Chem. B **128**(31), 7558–7567 (2024).

O-16 Unusual Vibrational Coupling of the Schiff Base in the Retinal Chromophore of Sodium Ion-Pumping Rhodopsins
T. Nakamura, Y. Shinozaki, A. Otomo, T. Urui, M. Mizuno, R. Abe-Yoshizumi, M. Hashimoto, K. Kojima, Y. Sudo, H. Kandori, and Y. Mizutani
J. Phys. Chem. B **128**(32), 7813–7821 (2024).

O-17 Dual Thermoresponsive Polysaccharide Derivative – Water System. Partially Substituted Amylose Butylcarbamate in Water
Y. Nakata, S. Kitamura, and K. Terao
Carbohydr. Polym. **325**, 121587 (2024) (8 pages).

O-18 Highly Branched Thermoresponsive Polysaccharide Derivative in Water. Partly Substituted Highly Branched Cyclic Dextrin Ethylcarbamate
A. Kobayashi and K. Terao,
Carbohydr. Polym. **343**, 122473 (2024) (8 pages).

O-19 Complex Formation of Gold Nanoparticles with Collagen in Aqueous Media Studied by X-Ray Scattering and Absorption Spectroscopy
K. Sagawa and K. Terao
Langmuir **40**(39), 20755–20762 (2024).

R-1 Origin of the Difference in Proton Transport Direction between Inward and Outward Proton-Pumping Rhodopsins
T. Urui and Y. Mizutani
Acc. Chem. Res. **57**(22), 3292–3302 (2024).

R-2* 先にプロトンを受け取るか，先に向きを変えるか
水谷泰久
生物物理 **64**(3), 137–140 (2024).

B-1* 新基礎化学実験法 2024
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（2024 年 2 月 10 日発行）.

B-2 Time-Resolved Raman Mapping of Energy Flow in Proteins
Y. Mizutani, S. Yamashita, and M. Mizuno
In *Ultrafast Electronic and Structural Dynamics*, K. Ueda, Ed., Springer Nature, pp. 337–354 (2024).

M-1* イオンや分子を内包したフラーレンの熱力学的性質
宮崎裕司，中野元裕
大阪大学低温センター研究報告書（令和 4 年度）33–44 (2024).

M-2* 低温センターとの関わりと思い出
宮崎裕司
大阪大学低温センター50 周年記念誌 (2024) 印刷中.

M-3* 第 26 回 IUPAC 化学熱力学国際会議
中澤康浩
熱測定 **51**(1), 38–42 (2024).

M-4* 熱測定討論会報告　学会賞受賞講演
中澤康浩
熱測定 **51**(1), 43 (2024).

M-5* ポストコロナの時代に向け多様な参加形態の講座を用意　第 26 回 IUPAC 化学熱力学国際会議（ICCT-2023）
中澤康浩
ポストコロナに向けた国際会議誘致競争力向上のための事例集（観光庁）p. 62 (2024).

M-6* スピン液体物質における三角格子異方性による熱力学的特徴への影響
山下智史, 坏 広樹, 中澤康浩
大阪大学低温センター研究報告書（令和 4 年度）22–26 (2024).

M-7* 大阪大学低温センター50 周年のご祝辞 ～感謝と今後にむけて～
中澤康浩
大阪大学低温センター50 周年記念誌 (2024) 印刷中.