Polymer Hot Information on the Latest Week's Articles (March in 2021)

On March 1, 2021

Reviews

Black-Box Optimization for Automated Discovery
Published as part of the Accounts of Chemical Research special issue "Data Science Meets Chemistry".
Kei Terayama, Masato Sumita, Ryo Tamura, and Koji Tsuda*
Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 26, 2021
https://dx.doi.org/10.1021/acs.accounts.0c00713
・材料開発の試行錯誤によるプロセスの問題点を指摘して材料設計の方法論展開、論理学の講義に最適

3D Cell Culture: Recent Development in Materials with Tunable Stiffness
Désirée Baruffaldi, Gianluca Palmara, Candido Pirri, and Francesca Frascella*
ACS Applied Bio Materials, Articles ASAP (Review), Publication Date (Web): February 26, 2021
https://dx.doi.org/10.1021/acsabm.0c01472
・従来の 2D 細胞培養から 3D への展開、組織の堅さが重要でハイドロゲル・エラストマーが必須材料に

Review of the Mechanism of Nanocarriers and Technological Developments in the Field of Nanoparticles for Applications in Cancer Theragnostics
Nehil Shreyash,† Muskan Sonker,† Sushant Bajpai,† and Saurabh Kr Tiwary*
ACS Applied Bio Materials, Articles ASAP (Review), Publication Date (Web): February 22, 2021
https://dx.doi.org/10.1021/acsabm.1c00020
・癌セラグノスティクス（診断+治療）DDS 用ベシクル/ナノ粒子/デンドリマー等ナノキャリアの応用

Polymer Colloids: Synthesis Fundamentals to Applications (special issue)
Biomacromolecules 2020, 21, 4377−4378 (Editorial), Publication Date (Web): November 9, 2020
https://dx.doi.org/10.1021/acs.biomac.0c01462
・The International Polymer Colloid Group (IPCG, 1972 年創設)のメンバーによって執筆された論文の特集号

Two-Dimensional Metal-Organic Framework Materials: Synthesis, Structures, Properties and Applications
Gouri Chakraborty, In-Hyeok Park, Raghavender Medishetty, and Jagadese J. Vittal*
Chemical Reviews, Articles ASAP (Review), Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/acs.chemrev.0c01049
・1620 件の論文を引用して 2DMOF の現状を網羅的に解説、ビジュアル的にもわかりやすい構成の総説

Stimuli-responsive metal–organic framework nanoparticles for controlled drug delivery and medical applications
Zhixin Zhou, Margarita Va´zquez-Gonza´lez and Itamar Willner *
Chem. Soc. Rev., 2021, Advance Article, The article was first published on 24 Feb 2021
https://doi.org/10.1039/D0CS01030H
・MOF 利用の刺激応答(pH/イオン/酸化還元/光/バイオマーカー/酵素他)性ナノ粒子(無機材料系)DDS 応用

Helical polymer self-assembly and chiral nanostructure formation
Randall A. Scanga and James F. Reuther*
Polym. Chem., 2021, Advance Article, The article was first published on 16 Feb 2021
https://doi.org/10.1039/D0PY01558J
・ヘリカル高分子ナノ凝集に関する研究網羅、らせん形成/キラル発生/液晶/場/PISA/CPL/センサー他多数

Self-Assembly of Photoresponsive Molecular Amphiphiles in Aqueous Media
Shaoyu Chen, Romain Costil, Franco King-Chi Leung,* and Ben L. Feringa*
Angew. Chem. Int. Ed., First published: 16 September 2020
https://doi.org/10.1002/anie.202007693
・光応答性の両真媒性分子の自己集合体の構造形成/光応答/配列/機能化などを基礎的事項を中心に解説

Healable and self-healing polyurethanes using dynamic chemistry
Robert H. Aguirresarobea, Sil Nevejans, Bernd Reck, Lourdes Irusta, Haritz Sardon, José M. Asua, Nicholas Ballarda
Progress in Polymer Science, Volume 114, March 2021, 101362
https://doi.org/10.1016/j.progpolymsci.2021.101362

・ポリウレタン架橋構造の動的共有結合形成による自己集合と自己修復に関する解説

Phosphorus-containing flame retardant epoxy thermosets: Recent advances and future perspectives
Siqi Huo, Pingan Song*, Bin Yu, Shiya Ran, Venkata S. Chevali, Lei Liu , Zhengping Fang*, Hao Wang
Progress in Polymer Science, Volume 114, March 2021, 101366
https://doi.org/10.1016/j.progpolymsci.2021.101366
・リン系不燃化エポキシに関する総説、数十年前から続いているが革新的な展開が難しい課題のひとつ

Polymer Synthesis

Singlet and Triplet Contributions to the Excited-State Activities of Dihydrophenazine, Phenoxazine, and Phenothiazine Organocatalysts Used in Atom Transfer Radical Polymerization
Aditi Bhattacherjee,*, Mahima Sneha,*, Luke Lewis-Borrell, Giordano Amoruso, Thomas A.A. Oliver, Jasper Tyler, Ian P. Clark, and Andrew J. Orr-Ewing*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/jacs.1c00279
・有機触媒光レドックス ATRP の開始反応を分光学的解析、励起状態解析から反応機構を解明、重合皆無

Elucidating preparation-structure relationships for the morphology evolution during the RAFT dispersion polymerization of N-acryloyl thiomorpholine
Fabian H. Sobotta, Maren T. Kuchenbrod, Christian Grune, Dagmar Fischer, Stephanie Hoeppener and Johannes C. Brendel*
Polym. Chem., 2021, Advance Article, The article was first published on 18 Feb 2021
https://doi.org/10.1039/D0PY01697G
・(チオ)モルフォリン構造を含むアクリルアミドの水系分散 RAFT 重合-PISA による微粒子構造配列制御

Rapid High-Resolution 3D Printing and Surface Functionalization via Type I Photoinitiated RAFT Polymerization
Kenny Lee, Nathaniel Corrigan,* and Cyrille Boyer*
Angew. Chem. Int. Ed., Version of Record online:26 February 2021
https://doi.org/10.1002/anie.202016523
・光制御 RAFT 重合を高精度 3D プリンティングに応用、エッフェル塔や北斎の The Great Wave を再現

Self-Immolative RAFT-Polymer End Group Modification
Maximilian Scherger, Hans Joachim Räder, and Lutz Nuhn*
Macromolecular Rapid Communications, Version of Record online:25 February 2021
https://doi.org/10.1002/marc.202000752
・RAFT 重合ポリマー末端基を SH 基に変換するための試薬を重合系に追加してワンポットで末端構造制御

Recyclable Heterogeneous Radical Generators Toward In-Flow Polymer Elaboration System
Yue Ji, Minami Oka, and Satoshi Honda*
Chemical Method, Volume 1., No. 1 pp. 12-16, First Published:23 July 2020
https://doi.doi.org/10.1002/cmtd.202000016
・Wiley2021 年創刊雑誌、光照射でラジカル発生(ドーマントと平衡)、シリカ担持してフローで重合反応

Polymer Degradation

Blends of Poly(butylene glutarate) and Poly(lactic acid) with Enhanced Ductility and Composting Performance
Apisata Holt, Yutian Ke, Jessica A. Bramhall, Grant Crane, Joe B. Grubbs, III, Evan M. White, Jessica Horn, and Jason Locklin*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/acsapm.1c00078
・PLA/ポリブチレングルタレート混合系で機械特性(延性)と生分解性(コンポスト化)の両立(妥協)探索

Recycling of polyurethane by acidolysis: The effect of reaction conditions on the properties of the recovered polyol
N. Gama, B. Godinho, G. Marques, R. Silva, A. Barros-Timmons, A. Ferreira*
Polymer, Volume 219, 26 March 2021, 123561, Available online 23 February 2021.
https://doi.org/10.1016/j.polymer.2021.123561
・問題化しているポリウレタンのリサイクルに対する取り組み、酸分解で回収したジオールの品質向上

Bio-based & Biomedical Polymers

Hybrid Metal–Phenol Nanoparticles with Polydopamine-like Coating for PET/SPECT/CT Imaging
Salvio Suárez-García, Tullio V. F. Esposito, Jenna Neufeld-Peters, Marta Bergamo, Hua Yang, Katayoun Saatchi, Paul Schaffer, Urs O. Häfeli, Daniel Ruiz-Molina,* Cristina Rodríguez-Rodríguez,* and Fernando Novio*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 26, 2021
https://dx.doi.org/10.1021/acsami.0c20612
・SPECT/PET 診断用のイミダゾール/カテコール/金属イオン構成のナノ粒子を PEG と葉酸で表面修飾

Interfacial Photo-Cross-Linking: Simple but Powerful Approach for Fabricating Capsule Polymer Particles with Tunable pH-Responsive Controlled Release Capability
Yukiya Kitayama* and Atsushi Harada*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 22, 2021
https://dx.doi.org/10.1021/acsami.0c20152
・薬物放出用 pH/光応答性中空ポリマーカプセルを作製、Corresponding Author2 人だけの原著研究論文

Collagen I Based Enzymatically Degradable Membranes for Organon-a-Chip Barrier Models
Yusuf B. Arık,† Aisen de sa Vivas,† Daphne Laarveld, Neri van Laar, Jesse Gemser, Thomas Visscher, Albert van den Berg, Robert Passier, and Andries D. van der Meer*
ACS Biomaterials Science & Engineering, Articles ASAP (Article), Publication Date (Web): February 24, 2021
https://dx.doi.org/10.1021/acsbiomaterials.0c00297
・コラーゲン I 酵素分解性ハイドロゲル膜をマイクロチップの流路に利用、分析条件での応答/耐性評価

Polymer Materials

Formation of Single Double-Layered Coacervate of Poly(N,Ndiethylacrylamide) in Water by a Laser Tweezer
Mitsuhiro Matsumoto, Taka-Aki Asoh, Tatsuya Shoji, and Yasuyuki Tsuboi*
Langmuir, Articles ASAP (Article), Publication Date (Web): February 22, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c03009
・ポリアクリルアミド 2 重層コアセルベートを水中でレーザー光 Tweezer(ピンセット)でつまんで操作

A Solvent-Free and Water-Resistant Dipole–Dipole Interaction-Based Super Adhesive
Bo Liu, Ziyang Xu, Chuanchuan Fan, Chunyan Cui, Yuan Yao, Meng Xiao, and Wenguang Liu*
Macromolecular Rapid Communications, Version of Record online:26 February 2021
https://doi.org/10.1002/marc.202100010
・EG ジアクリレート架橋体にアクリロニトリル導入して分子間静電相互作用により接着強度を向上

Polymer Structure & Physics

Free Volume Element Sizes and Dynamics in Polystyrene and Poly(methyl methacrylate) Measured with Ultrafast Infrared Spectroscopy
Sebastian M. Fica-Contreras, David J. Hoffman, Junkun Pan, Chungwen Liang, and Michael D. Fayer*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/jacs.0c13397
・超高速 IR 分光で制限付配向異方性評価、PS と PMMA の自由体積要素(3.4, 3.0 Å)とダイナミクス追跡

Johari–Goldstein Heterogeneous Dynamics in a Model Polymer
Francesco Puosi,*, Antonio Tripodo, Marco Malvaldi, and Dino Leporini*
Macromolecules, Articles ASAP (Article), Publication Date (Web): February 26, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00066
・Johari-Goldstein(JG)緩和不均一性にモデルポリマーMD シミュレーションから αβ 緩和問題取り組み

Nonlinear Elasticity of Ultrasoft Near-Critical Gels with Extremely Sparse Network Structures Revealed by Biaxial Stretching
Takuma Aoyama, Naoto Yamada, and Kenji Urayama*
Macromolecules, Articles ASAP (Article), Publication Date (Web): February 23, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02737
・ゲル形成臨界点付近のソフトゲル非対称二軸延伸時のネットワークの広がりの非線形弾性特性を解析

Adhesion & Interface Science

Chitin Nanocrystals as an Eco-friendly and Strong Anisotropic Adhesive

Hongzhong Liu, Yue Feng, Xiang Cao, Binghong Luo, and Mingxian Liu*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 26, 2021
https://dx.doi.org/10.1021/acsami.1c02000
・キチンナノ粒子懸濁液を接着剤として利用、乾燥過程でナノ粒子が自己配向して接着力に異方性発現

Role of Chemical Functionality in the Adhesion of Aluminum and Isotactic Polypropylene
Yida Liu, Yuri Shigemoto, Takeshi Hanada, Takayuki Miyamae, Kazunori Kawasaki, and Shin Horiuchi*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/acsami.0c22988
・PP/Al 難接着系での変成 PP の作用を STEM/EELS で 3D 解析、界面結合強度よりソフト界面層強度が重要

Weakly Ionically Bound Thermosensitive Hyperbranched Polymers
Hansol Lee, Alexandr Stryutsky, Akhlak-Ul Mahmood, Abhishek Singh, Valery V. Shevchenko, Yaroslava G. Yingling, and Vladimir V. Tsukruk*
Langmuir, Articles ASAP (Article), Publication Date (Web): February 23, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c03487
・温度応答性 PNIPAM 両新媒性ハイパーブランチポリマーを弱いイオン相互作用で気水界面配列の制御

Static adhesion hysteresis in elastic structures
Edvin Memet, Feodor Hilitski, Zvonimir Dogic and L. Mahadevan*
Soft Matter, 2021, Advance Article, The article was first published on 22 Feb 2021
https://doi.org/10.1039/D0SM02192J
・弾性材料の PSA 接着の引き剥がしに対するヒステリシスとエネルギー散逸についてのモデル化の試み

Crystal Engineering & Liquid Crystals
Application of Crystalline Matrices for the Structural Determination of Organic Molecules
Ashley D. Cardenal and Timothy R. Ramadhar*
ACS Central Science, Articles ASAP (Outlook), Publication Date (Web): February 17, 2021
https://dx.doi.org/10.1021/acscentsci.0c01492
・近年急増する結晶空孔内に有機分子を取り込ませて単結晶構造解析するアプローチの全体像がわかる

Pentafluorophenylphosphonic Acid as a New Building Block for Molecular Crystal Fabrication
Sylvain G. Dutremez,* Xavier Dumail, Sonia Mallet-Ladeira, Arie van der Lee, Dominique Granier, Nathalie Masquelez, and Jean-Sébastien Filhol
Crystal Growth & Design, Articles ASAP (Article), Publication Date (Web): February 24, 2021
https://dx.doi.org/10.1021/acs.cgd.0c01402
・結晶中での分子配列のためのビルディングブロック、単層と二重層を制御でき固体反応に応用可能？

Reversible Solvatochromism of Polydiacetylenes Based on Extensively Hydrogen-Bonded Tubular Arrays
BubsungKim, Jung-Moo Heo, Mohammed Iqbal Khazi, and Jong-Man Kim*
Macromolecules, Articles ASAP (Article), Publication Date (Web): February 25, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00107
・著者らが以前から使用のジアセチレン含有大環状分子を水素結合で連結してソルバトクロミズム制御

General Chemistry & Others
高解像度 3D 印刷をわずか数秒で
Nature ダイジェスト Vol. 18 No. 3 doi: 10.1038/ndigest.2021.210340
原文：*Nature* (2020-12-24) doi: 10.1038/d41586-020-03543-3
高解像度 3D 印刷をわずか数秒で | Nature ダイジェスト | Nature Research (natureasia.com)
・以前に論文紹介済み

On March 8, 2021

Reviews
Cyclic Anhydrides as Powerful Tools for Bioconjugation and Smart Delivery
Maria Vittoria Spanedda* and Line Bourel-Bonnet
Bioconjugate Chemistry, Articles ASAP (Review), Publication Date (Web): March 4, 2021

https://dx.doi.org/10.1021/acs.bioconjchem.1c00023
・DDS 等への環状無水物の利用、デンドリマー末端修飾、シトラコン酸無水物の位置選択的開環反応も

Elastic Molecular Crystals: From Serendipity to Design to Applications
Soumyajit Ghosh* and Manish Kumar Mishra*
Crystal Growth & Design, Articles ASAP (Review), Publication Date (Web): March 4, 2021
https://dx.doi.org/10.1021/acs.cgd.0c01743
・一時期ブームになった外部刺激で大変形する有機結晶、応用面よりも基礎科学的な興味が強い分野

Understanding nanoparticle endocytosis to improve targeting strategies in nanomedicine
Mauro Sousa de Almeida, Eva Susnik, Barbara Drasler, Patricia Taladriz-Blanco, Alke Petri-Fink and Barbara Rothen-Rutishauser
Chem. Soc. Rev., 2021, Advance Article; The article was first published on 05 Mar 2021
https://doi.org/10.1039/D0CS01127D
・細胞へのナノ粒子のエンドサイトーシス取り込みの機構/因子/解析方法/定量方法などを詳細に解説

Stimuli responsive dynamic transformations in supramolecular gels
Santanu Panja and Dave J. Adams
Chem. Soc. Rev., 2021, Advance Article; The article was first published on 01 Mar 2021
https://doi.org/10.1039/D0CS01166E
・超分子ゲルを後外部刺激(酵素/光/pH/反応など)でさらに構造変換/機能化するための方法論、DA も登場

Recent Advances of Polymer-Based Pure Organic Room Temperature Phosphorescent Materials
Jun Wang, Xin-Yue Lou, Yan Wang, Jun Tang,* and Ying-Wei Yang*
Macromolecular Rapid Communications, Version of Record online:03 March 2021
https://doi.org/10.1002/marc.202100021
・室温燐光発光ポリマー材料だけに絞った総説、マトリクスは様々、発光はナフタルイミド他 BODIPY も

Polymer Synthesis

Precise Control of the Surface and Internal Morphologies of Porous Particles Prepared Using a Spontaneous Emulsification Method
Shinnosuke Nishimura and Yoshihiko Murakami*
Langmuir, Articles ASAP (Article), Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c03311
・表面や内部モルフォロジー制御した多孔微粒子を乳化重合で 1 段階合成、w/o 乳化液滴がポロゲンに

Mixed Polyplex Micelles with Thermoresponsive and Lysine-Based Zwitterionic Shells Derived from Two Poly(vinyl amine)-Based Block Copolymers
Ryosuke Kanto, Ryo Yonenuma, Mizuki Yamamoto, Hiroyuki Furusawa, Shigekazu Yano, Mitsuru Haruki, and Hideharu Mori*
Langmuir, Articles ASAP (Article), Publication Date (Web): March 2, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c02197
・ポリビニルアミンをベースに RAFT 重合でカルボン酸を含むポリマーをブロックして微粒子シェルに

Concurrent atom transfer radical polymerization and nitroxide radical coupling relay polymerization
Yu Wang,* Sushant P. Sahu, Alec J. Clay and Amanda J. Gildersleeve
Chem. Commun., 2021, Advance Article; The article was first published on 26 Feb 2021
https://doi.org/10.1039/D1CC00682G
・含ハロゲン TEMPO 存在下 ATRP、ラジカルカップリング/末端成長の繰り返し、官能基/分岐導入に応用

ε-Thionocaprolactone: an accessible monomer for preparation of degradable poly(vinyl esters) by radical ring-opening polymerization
Oleksandr Ivanchenko, Ugo Authesserre, Guilhem Coste, Stéphane Mazières, Mathias Destarac* and Simon Harrisson
Polym. Chem., 2021, Advance Article; The article was first published on 26 Feb 2021
https://doi.org/10.1039/D1PY00080B
・RAFT ラジカル開環重合でビニルエステルポリマー(PVA 含む)にアミン分解可能なチオエステル単位導入

Peroxide-free redox initiating systems for polymerization in mild conditions
Ahmad Arar, Assi Al Mousawi, Fabrice Morlet-Savary and Jacques Lalevée
Polym. Chem., 2021, Advance Article; The article was first published on 02 Mar 2021
https://doi.org/10.1039/D1PY00172H
・芳香族スルホン酸 Na(還元剤)/金属塩(酸化剤)でレドックス重合、過酸化物は不使用だが、Cu/Mn を使用

A Schiff base ligand for photoinduced atom transfer radical polymerization
Xiaoling Xu, Mei Hong, Chunyang Bao, Yan Wang, Jing Chen, Die Li, Tianheng Wang and Qiang Zhang
Polym. Chem., 2021, Advance Article; The article was first published on 26 Feb 2021
https://doi.org/10.1039/D0PY01672A
・光 ATRP 用 Cu 配位子 Py_3Tren 開発、Me_6Tren の改良型、ARGET ATRP/SARA ATRP への適用結果有

Biobased & Biomedical Polymers
Development of a PAMAM Dendrimer for Sustained Release of Temozolomide against Experimental Murine Lymphoma: Assessment of Therapeutic Efficacy
Ugir Hossain Sk,* Sumit Kumar Hira, Abhinandan Rej, Debapriya RoyMahapatra, and Partha Pratim Manna*
ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): March 4, 2021
https://dx.doi.org/10.1021/acsabm.0c01599
・テモゾロミドと結合した PAMAM デンドリマーがリンパ腫・DOX 耐性腫瘍細胞のアポトーシスを誘導

Synthesis and formulation of self-immolative PEG-aryl azide block copolymers and click-to-release reactivity with trans-cyclooctene
Sumit Dadhwal, Arnold Lee, Shailesh K. Goswami, Sarah Hook, Allan B. Gamble
Journal of Polymer Science, First Published: 3 March 2021
https://doi.org/10.1002/pol.20210020
・PEG とアミノ基アリルアジド BOC 保護側鎖ポリマーブロック共重合体 ATRP/RAFT 合成、刺激応答変換

Chemical structure and polymer properties of wheat and cabbage lignins – Valuable biopolymers for biomedical applications
Anatoly Petrovich Karmanov, Albert Vladimirovich Kanarsky, Lyudmila Sergeevna Kocheva, Vladimir Aleksandrovich Belyy*, Eduard Ilyasovich Semenov, Natalia Gelievna Rachkova, Nikolai Ivanovich Bogdanovich, Sergey Alexandrovich Pokryshkin
Polymer, Volume 220, 2 April 2021, 123571
・ロシアには小麦とキャベツが豊富な資源？リグニン構造を調べてバイオメディカル応用の可能性追求

Polymer Materials
Bulk Transparent Photon Upconverting Films by Dispersing HighConcentration Ionic Emitters in Epoxy Resins
Tsubasa Kashino, Masanori Hosoyamada, Rena Haruki, Naoyuki Harada, Nobuhiro Yanai,* and Nobuo Kimizuka*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acsami.0c23121
・三重項-三重項消光型アップコンバージョン分子をエポキシに封じ込めて空気中で安定な透明発光材料

Paintable Hybrids with Thermally Stable Dual Emission Composed of Tetraphenylethene-Integrated POSS and MEH-PPV for Heat Resistant White-Light Luminophores
Masayuki Gon, Satoru Saotome, Kazuo Tanaka,* and Yoshiki Chujo
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acsami.0c22298
・AIE 部位を組み込んだ POSS とポリフェニレンビニレンの印刷可能ハイブリッド材料で耐熱白色発光

Superior Water-Resistant Poly(2-hydroxyethyl methacrylate phosphate) Flame Retardant and a Transparent, Flame-Retardant, and Biodegradable Poly(lactide) Blend Film
Xiaobing Ma, Han Yun, Ningjing Wu,* Fukun Niu, and Jihang Yu
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 1, 2021
https://dx.doi.org/10.1021/acsapm.0c01140
・HEMA リン酸エステルを重合して架橋体微粒子に、PLA に 0.5wt%ブレンドで難燃性向上/透明性保持

Oligodimethylsiloxane-Oligoproline Block Co-Oligomers: the Interplay between Aggregation and Phase Segregation in Bulk and Solution

Brigitte A.G. Lamers, Andreas Herdlitschka, Tobias Schnitzer, Mathijs F.J. Mabesoone, Sandra M.C. Schoenmakers, Bas F.M. de Waal, Anja R.A. Palmans, Helma Wennemers,* and E.W. Meijer*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): March 4, 2021
https://dx.doi.org/10.1021/jacs.1c01076
・ブロックコオリゴマーを用いて高度秩序化したナノ構造を形成、オリゴプロリン凝集挙動解明に有用

Simple preparation, properties, and functions of vitrimer-like polyacrylate elastomers using trans-N-alkylation bond exchange
Mikihiro Hayashi, Yuta Oba, Takahiro Kimura, Akinori Takasu
Polymer Journal, Published04 March 2021
https://doi.org/10.1038/s41428-021-00472-4
・アクリレートポリマーの側鎖にピリジン環を導入してジブロモヘキサンを動的架橋剤として使用

Smart steam release of newly developed temperature-responsive nanocomposite films derived from phase change material
Sarinthip Thanakkasaranee, Kambiz Sadeghi, Jongchul Seo*
Polymer, Volume 219, 26 March 2021, 123543
https://doi.org/10.1016/j.polymer.2021.123543
・PEG の結晶化融解を利用して保湿調整材料に応用、最近結晶/非晶転移を利用した保湿制御の研究急増

Polymer Structure & Physics

Structure−Property Relationship of Cellulose Nanocrystal−Polyvinyl Alcohol Thin Films for High Barrier Coating Applications
Md Nuruddin, Reaz A. Chowdhury, Ryan Szeto, John A. Howarter, Kendra A. Erk, Caroline R. Szczepanski,* and Jeffrey P. Youngblood*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acsami.0c21525
・PVA/CNC 複合材料を使用した食品包装用ガスバリアフィルムの PVA 領域の自由体積とガス透過機構

Vitrimer Transition Temperature Identification: Coupling Various Thermomechanical Methodologies
Amber M. Hubbard,* Yixin Ren, Dominik Konkolewicz, Alireza Sarvestani, Catalin R. Picu, Gary S. Kedziora, Ajit Roy, Vikas Varshney, and Dhriti Nepal*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 4, 2021
https://dx.doi.org/10.1021/acsapm.0c01290
・Vitrimer の応力緩和とクリープから転移温度(以上でエステル交換が頻繁に)の正確に評価方法を提案

Mechanism Dictates Mechanics: A Molecular Substituent Effect in the Macroscopic Fracture of a Covalent Polymer Network
Shu Wang, Haley K. Beech, Brandon H. Bowser, Tatiana B. Kouznetsova, Bradley D. Olsen,* Michael Rubinstein,* and Stephen L. Craig*
Journal of the American Chemical Society, Articles ASAP (Communication), Publication Date (Web): March 2, 2021
https://dx.doi.org/10.1021/jacs.1c00265
・PEG ゲルのマクロな破壊の亀裂進展とネットワーク分子の弱く設計した架橋部分の開裂を直接リンク

Quasicrystals and Their Approximants in a Crystalline−Amorphous Diblock Copolymer
Andreas J. Mueller, Aaron P. Lindsay, Ashish Jayaraman, Timothy P. Lodge, Mahesh K. Mahanthappa,* and Frank S. Bates*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02871
・半結晶性ラメラ(Lc)/液晶状パッキング(LLP)/12 面体準結晶(DDQCs)構造から BCC と無秩序平衡に

Modeling the Glass Transition and Glassy Dynamics of Random Copolymers Using the TS2 Mean-Field Approach
Valeriy V. Ginzburg*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 2, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00024
・ガラス転移とガラスのダイナミクスに関する理論研究、P(S-r-MMA)と P(S-stat-BMA)に対して計算

A structural study and its relation to dynamic heterogeneity in a polymer glass former

Cristian Balbuena,* Melisa Mariel Gianett
Soft Matter, 2021, Advance Article; The article was first published on 16 Feb 2021
https://doi.org/10.1039/D0SM02065F
・ガラス形成過程の不均一性の実験/解析/理論の論文、理解には時間をかけて読み込む必要が有りそう

Adhesion & Interface Science

Superstrong Adhesive of Isocyanate-Free Polyurea with a Branched Structure
Hongxing Yang, Guanben Du,* Zhi Li, Xin Ran, Xiaojian Zhou, Taohong Li, Wei Gao, Jun Li, Hong Lei, and Long Yang*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 3, 2021
https://dx.doi.org/10.1021/acsapm.1c00056
・分岐状ポリアミン分子でイソシアネート/溶媒/触媒すべてフリーのワンポット反応で高強度接着を実現

Thickness and Substrate Dependences of the Relaxation of SpinCoated Polymethyl Methacrylate Ultrathin Films Supported on SiO_2 and SiOH Substrates
Tulika Sharma,* Masaaki Konishi, Kazuki Sekiya, and Isao Takahashi*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 2, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02405
・SiO_2 と SiOH 表面にスピンコートした PMMA 鎖の広がりと液層/ガラス層/表面層との相関を議論

Force fields for water–surface interaction: is reproduction of the experimental water contact angle enough?
Le Nhan Pham and Tiffany R. Walsh
Chem. Commun., 2021, Advance Article; The article was first published on 27 Feb 2021
https://doi.org/10.1039/D1CC00426C
・ナノレベルまで液滴サイズの水接触角を量子計算/MD で求めると実測値と違いが、相互作用の見直し

Crystal Engineering & Liquid Crystals

Versatile Organosuperelastic Deformability by Multiple Mechanical Twinning
Toshiyuki Sasaki, Keigo Nishizawa, and Satoshi Takamizawa*
Crystal Growth & Design, Articles ASAP (Article), Publication Date (Web): March 2, 2021
https://dx.doi.org/10.1021/acs.cgd.1c00054
・珍しい分子性単結晶の超塑性変形例とメカニズム解析、これまで数種類の化合物の同様の挙動を報告

General Chemistry & Others

Beverage bottle capacity, packaging efficiency, and the potential for plastic waste reduction
R. Becerril‐Arreola* & R. E. Bucklin
Scientific Repots, **11,** 3542 (2021), published 25 February 2021
https://doi.org/10.1038/s41598-021-82983-x
紹介記事：環境：飲料製品のペットボトルを小型から中型に変えれば PET 廃棄物を削減できる ｜Scientific Reports｜Nature Research

Comprehensive insights into synthetic nitrogen fixation assisted by molecular catalysts under ambient or mild conditions
Yoshiaki Tanabe and Yoshiaki Nishibayashi
Chem. Soc. Rev., 2021, Advance Article; The article was first published on 02 Mar 2021
https://doi.org/10.1039/D0CS01341B
・N_2 を NH_3 に変換する 100 年続く高温高圧 Haber-Bosch 法に代わる触媒開発/実用化、昨年末 TV でも報道

On March 15, 2021

Reviews

Hybrid Gelatin Hydrogels in Nanomedicine Applications
Bidita Salahuddin, Shuo Wang, Danial Sangian, Shazed Aziz,* and Qi Gu*
ACS Applied Bio Materials, Articles ASAP (Review), Publication Date (Web): March 9, 2021
https://dx.doi.org/10.1021/acsabm.0c01630
・ゼラチンベースの医療用ハイドロゲル総説、最近見直されて利用拡大中、他材料との組み合わせ無限

Recent Advances in Biomedical Applications of Cholic Acid-Based Macromolecules

Subhasish Sahoo, Pooja Ghosh, Supratim Banerjee,* and Priyadarsi De*
ACS Applied Polymer Materials, Articles ASAP (Review), Publication Date (Web): March 8, 2021
https://dx.doi.org/10.1021/acsapm.0c01435
・コール酸(胆汁酸)バイオ利用に関する 2011 年以降の動向、DDS/膜透過/抗菌/遺伝子導入/創傷治癒など

Protein-Mimetic Self-Assembly with Synthetic Macromolecules
Meredith H. Barbee, Zoe M. Wright, Benjamin P. Allen, Hailey F. Taylor, Emily F. Patteson, and Abigail S. Knight*
Macromolecules, Articles ASAP (Perspective), Publication Date (Web): March 9, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02826
・タンパク質を模倣した自己集合型合成高分子、共有-非共有結合/単-多分子凝集/ペプチド/ブロックなど

Versatile functionalization of polymeric soft materials by implanting various types of dynamic cross-links
Mikihiro Hayashi
Polym. J., Published 12 March 2021
https://doi.org/10.1038/s41428-021-00474-2
・超分子架橋/光架橋/動的共有結合架橋を利用した機能性材料の合成設計を含めた広めの範囲での総説

Polymer Synthesis

Design of an LCST–UCST-Like Thermoresponsive Zwitterionic Copolymer
Nobuyuki Morimoto* and Masaya Yamamoto*
Langmuir, Articles ASAP (Article), Publication Date (Web): March 9, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c03128
・LCST を示す両親媒性 DMAPS と相転移しない PEG メタクリレートを RAFT 重合して LCST/UCST 両方発現

Well-Defined PIII-Terminated Polymers from Phosphorylated Carbodithioate RAFT Agents
Andrii Karpus, Simon Harrisson, Rinaldo Poli, Stéphane Mazieres,* Eric Manoury,* and Mathias Destarac*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 8, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02805
・P 含有新規 RAFT 剤の反応性を BH_3 で制御、St/BA の重合後に脱 BH_3 して P(III)を末端に含むポリマー合成

Switching between Thermal Initiation and Photoinitiation Redirects RAFT-Mediated Polymerization-Induced Self-Assembly
Xuhui Luo,§ Shanzhi Zhao,§ Ying Chen, Li Zhang, and Jianbo Tan*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 8, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00038
・アクリルアミド RAFT 重合誘起の PISA で温度と光制御によって球状ミセルとベシクルの形状を作り分け

Multiresponsive Polymer Nanoparticles Based on Disulfide Bonds
Maximilian Wagner, Anja Krieger, Martin Minameyer, Benjamin Hämisch, Klaus Huber, Thomas Drewello, and Franziska Gröhn*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 8, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00299
・4 官能チオール PETMP をベースにジスルフィド形成を利用してポリマー微粒の形態と機能をデザイン

The synthesis of thermoresponsive POSS-based eight-arm star poly(N-isopropylacrylamide): A comparison between Z-RAFT and R-RAFT strategies
Bo Pang, Rui Liu,a Guang Han,* Wei Wang* and Wangqing Zhang
Polym. Chem., 2021, Advance Article; The article was first published on 02 Mar 2021
https://doi.org/10.1039/D1PY00087J
・RFAT 重合で POSS ベースの 8 本鎖星形ポリマーPOSS-$(PNIPAM)_8$ 合成、R 型/Z 型両方で界面活性機能評価

Recyclable Bio-Based Photoredox Catalyst in Metal-Free Atom Transfer Radical Polymerization
Yanan Wang, Huili Li, Jinhuan Dong, Lijun Hu, Donglei Wei,* Liangjiu Bai, Huawei Yang, and Hou Chen*
Macromol. Chem. Phys., Version of Record online:05 March 2021
https://doi.org/10.1002/macp.202000406
・MMA の ATRP 用のバイオベースのメタルフリー有機光レドックス触媒開発、流行のキーワードを満載

Polymer Degradation

Full Circle Recycling of Polysiloxanes via Room-Temperature Fluoride-Catalyzed Depolymerization to Repolymerizable Cyclics
Buddhima Rupasinghe and Joseph C. Furgal*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 10, 2021
https://dx.doi.org/10.1021/acsapm.0c01406
・シリコーンポリマー(DMSO その他)を TBAF で環状モノマーに分解(解重合)、エラストマー/樹脂に適用

Mechanism of Elastic Properties of Biodegradable Poly[(R)-3- Hydroxybutyrate-co-4-hydroxybutyrate] Films Revealed by Synchrotron Radiation
Yuki Kawamura, Hongyi Gan, Taizo Kabe, Akira Maehara, Satoshi Kimura, Takaaki Hikima, Masaki Takata, and Tadahisa Iwata*
ACS Omega, Articles ASAP (Article), Publication Date (Web): March 12, 2021
https://dx.doi.org/10.1021/acsomega.0c05662
・生分解性ポリエステル延伸サンプルの放射光広角/小角 X 線散乱解析によって構造変化の可逆性を議論

Fabrication of flexible blend films using a chitosan derivative and poly(trimethylene carbonate)
Koichi Irikura, Natjaya Ekapakul, Chantiga Choochottiros, Nalinthip Chanthaset, Hiroaki Yoshid, Hiroharu Ajiro
Polym. J., Published 08 March 2021
https://doi.org/10.1038/s41428-021-00470-6
・トリメチレンカーボーネートポリマーとキトサンのブレンドフィルムの物性評価、分解性評価はなし

Bio-based & Biomedical Polymers
Modulation of Properties through Covalent Bond Induced Formation of Strong Ion Pairing between Polyelectrolytes in Injectable Conetwork Hydrogels
Avinash Kumar, Bhingaradiya Nutan, and Suresh K. Jewrajka*
ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): March 12, 2021
https://dx.doi.org/10.1021/acsabm.0c01673
・イオン相互作用/共有結合の共連続ネットワークをインクジェットに応用、メディカル以外に展開可能

Robust and Antiswelling Hollow Hydrogel Tube with Antibacterial and Antithrombotic Ability for Emergency Vascular Replacement
Jia Li, Meng Xiao, Yanjie Wang, Jianhai Yang,* and Wenguang Liu*
ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): March 10, 2021
https://dx.doi.org/10.1021/acsabm.1c00096
・アクリル酸亜鉛 NASC(水素結合部位を多く含むアクリルアミド誘導体）共重合体で人工血管作製・評価

Bursting and Reassembly of Giant Double Emulsion Drops Form Polymer Vesicles
Lucas Caire da Silva, Shoupeng Cao, and Katharina Landfester*
ACS Macro Lett. 2021, 10, 401-405, Articles ASAP (Letter), Publication Date (Web): March 10, 2021
https://dx.doi.org/10.1021/acsmacrolett.0c00849
・中空巨大 Double Emulsion Droplets 破壊して 1/500 サイズのベシクルに変換過程で高効率に薬物を取込み

Regulation of Proteins to the Cytosol Using Delivery Systems with Engineered Polymer Architecture
Jessica A. Kretzmann, David C. Luther, Cameron W. Evans, Taewon Jeon, William Jerome, Sanjana Gopalakrishnan, Yi-Wei Lee, Marck Norret, K. Swaminathan Iyer,* and Vincent M. Rotello*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): March 11, 2021
https://dx.doi.org/10.1021/jacs.1c00258
・フレキシブルなデンドロンポリマーと剛直なデンドリマーを使い分けて細胞外タンパク質デリバリー

Ring-Opening Metathesis Polymerization of Unsaturated Carbohydrate Derivatives: Levoglucosenyl Alkyl Ethers
Tapas Debsharma, Bernd Schmidt, André Laschewsky, and Helmut Schlaad*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 12, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02821
・セルロース原料 levoglucosenone をアルキルエーテル化して Grubbs 触媒で ROMP、グリーン溶媒使用

Polymer Materials
Titanium-Based Alloy Surface Modification with TiO2 and Poly(sodium 4-styrenesulfonate) Multilayers for Dental Implants

Igor L. Kitagawa, Celina M. Miyazaki, Letícia Pitol-Palin, Roberta Okamoto, Luana M. R. de Vasconcellos, Carlos J. L. Constantino, and Paulo N. Lisboa-Filho*
ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): March 11, 2021
https://dx.doi.org/10.1021/acsabm.0c01348
・Ti 材料表面を LbL 法で PNaSS/TiO_2 交互積層コーティングした歯科用インプラント材料、生体内で評価

Color Toning of Mie Resonant Silicon Nanoparticle Color Inks
Takuma Okazaki, Hiroshi Sugimoto,* Tatsuki Hinamoto, and Minoru Fujii
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 10, 2021
https://dx.doi.org/10.1021/acsami.1c01692
・シリコン（ここではシリカではない）/カーボンブラックのナノ粒子のミー散乱を利用した色調制御

Interfacial Engineering to Tailor the Properties of Multifunctional Ultralight Weight hBN-Polymer Composite Aerogels
Sehmus Ozden, Nikita S. Dutta, Katelyn Randazzo, Thierry Tsafack, Craig B. Arnold,* and Rodney D. Priestley*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 9, 2021
https://dx.doi.org/10.1021/acsami.0c16866
・グラフェン/酸化グラフェン/六方晶窒化ホウ素(hBN)2 次元ナノ構造から軽量高強度/熱伝導エアロゲル

Polymer Structure & Physics
Structure evolution during phase separation in spin-coated ethylcellulose/hydroxypropylcellulose films
Pierre Carmona,* Magnus Roding, Aila Sarkka, Christian von Corswant, Eva Olsson and Niklas Loren
Soft Matter, 2021, Advance Article; The article was first published on 12 Mar 2021
https://doi.org/10.1039/D1SM00044F
・エチルヒドロキシプロピルセルロースのスピンコートフィルムの相分離を共焦点レーザー顕微鏡評価

Adhesion & Interface Science
Spindle-Shaped Surface Microstructure Inspired by Directional Water Collection Biosystems to Enhance Interfacial Wetting and Bonding Strength
Hailang Wan, Junying Min,* Blair E. Carlson, Jianping Lin, and Chengcheng Sun
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 11, 2021
https://dx.doi.org/10.1021/acsami.0c21857
・生物の表面形態模倣＋表面ラフネスによる機械的結合＋水捕集＝アルミウム/エポキシ接合強度向上？

Controlled Two-Dimensional Alignment of Metal−Organic Frameworks in Polymer Films
Jin Yeong Kim, Kyle Barcus, and Seth M. Cohen*
Journal of the American Chemical Society, Articles ASAP (Communication), Publication Date (Web): March 8, 2021
https://dx.doi.org/10.1021/jacs.0c13459
・分散溶液の濃縮/乾燥過程で発生するポリマーフィルム中での MOF 異形粒子の自発的 2D 自己配列制御

Crystal Engineering & Liquid Crystals
Organic Molecular Crystals with Dual Stress-Induced Mechanical Response: Elastic and Plastic Flexibility
Poonam Gupta, Suryanarayana Allu, Durga Prasad Karothu, Tamas Panda, and Naba K. Nath*
Crystal Growth & Design, Articles ASAP (Article), Publication Date (Web): March 10, 2021
https://dx.doi.org/10.1021/acs.cgd.0c01119
・有機結晶の弾性変形と塑性変形可能な結晶材料を単結晶構造から設計、変形挙動はビデオで一目瞭然

On March 22, 2021

Reviews
Design of Abiological Digital Poly(phosphodiester)s
Laurence Charles* and Jean-Francois Lutz*
Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): March 17, 2021
https://doi.org/10.1021/acs.accounts.1c00038
・シークエンス制御関連の研究対象をポリリン酸エステル(DNA 類似合成ポリマー)に拡張、情報学領域へ

Vinylene-Linked Two-Dimensional Covalent Organic Frameworks: Synthesis and Functions

Shunqi Xu, Marcus Richter, and Xinliang Feng*
Accounts of Materials Research, Articles ASAP (Article), Publication Date (Web): March 18, 2021
https://doi.org/10.1021/accountsmr.1c00017
・2016 年にビニレン連結型の合成法を見いだして以降の 2D パイ共役 COF の合成研究と物性評価を総括

Engineering Tissue Barrier Models on Hydrogel Microfluidic Platforms
Daniel Vera, María García-Díaz,* Nuria Torras, Mar A lvarez, Rosa Villa, and Elena Martinez*
ACS Applied Materials & Interfaces, Articles ASAP (Review), Publication Date (Web): March 19, 2021
https://doi.org/10.1021/acsami.0c21573
・ハイドロゲルマイクロ流路を生体埋め込み用チップに応用するための課題解決アプローチを詳細解説

Stimulus-cleavable chemistry in the field of controlled drug delivery
Yufei Xue, Hua Bai, Bo Peng,* Bin Fang, Jonathan Baell, Lin Li,* Wei Huang* and Nicolas Hans Voelcker*
Chem. Soc. Rev., 2021, Advance Article, The article was first published on 18 Mar 2021
https://doi.org/10.1039/D0CS01061H
・様々な外部刺激に応答して化学的結合切断で薬物放出する DDS 関連の論文情報を集約、引用文献数 807

A Short Review on Self-Healing Thermoplastic Polyurethanes
Yuan Yao, Meng Xiao, and Wenguang Liu*
Macromol. Chem. Phys., First published: 20 March 2021
https://doi.org/10.1002/macp.202100002
・熱可塑性ポリウレタンに多点相互作用水素結合/動的共有結合/その他を導入して自己修復機能を設計

Polymer Synthesis

Divergent Synthesis of Graft and Branched Copolymers through Spatially Controlled Photopolymerization in Flow Reactors
Nathaniel Corrigan, Francisco J. Trujillo, Jiangtao Xu, Graeme Moad,* Craig J. Hawker,* and Cyrille Boyer*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 17, 2021
https://doi.org/10.1021/acs.macromol.0c02715
・バッチ/フロー光制御 RAFTT 重合でグラフト/ハイパーブランチ構造を制御して合成、豪出身 BIG3 共作

Perfluorophenyl Azides: Photo, Staudinger, and Multicomponent Postpolymerization Reactions on Homopolymers and PISA-Made Nanoparticles
Yuman Li, Nicolas Busatto, and Peter J. Roth*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 16, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02833
・メタクリル酸アジド基含有フルオロフェニルの RAFT-PISA を利用してナノ粒子集合体構造の形態制御

Effect of Ionization on Aqueous Phase Radical Copolymerization of Acrylic Acid and Cationic Monomers
Ikenna H. Ezenwajiaku and Robin A. Hutchinson*
Industrial & Engineering Chemistry Research, Articles ASAP, Publication Date (Web): March 16, 2021
https://dx.doi.org/10.1021/acs.iecr.1c00193
・アクリル酸と側鎖カチオン性メタクリレート/メタクリルアミドのラジカル共重合反応性への塩の効果

RAFT dispersion polymerization of N,N-dimethylacrylamide in a series of n-alkanes using a thermoresponsive poly(tert-octyl acrylamide) steric stabilizer
R. R. Gibson, A. Fernyhough, O. M. Musa and S. P. Armes *
Polym. Chem., 2021, Advance Article, The article was first published on 19 Mar 2021
https://doi.org/10.1039/D1PY00045D
・親水性/疎水性アクリルアミドの分散 RAFT ランダム共重合で有機溶媒中で UCST 応答するナノ粒子合成

Well-defined polyvinylpyridine-block-polystyrene diblock copolymers via RAFT aqueous-alcoholic dispersion polymerization: synthesis and isoporous thin film morphology
Katharina Nieswandt, Prokopios Georgopanos* and Volker Abetz*
Polym. Chem., 2021, Advance Article, The article was first published on 15 Mar 2021
https://doi.org/10.1039/D1PY00074H
・水/アルコール系 RAFT 分散重合で PS-b-PVP を合成、薄膜で貫通シリンダー規則配列構造を形成

Synthesis of polyester by means of polycondensation of diol ester and dicarboxylic acid ester through ester–ester exchange reaction
Takayoshi Katoh, Yukiko Ogawa, Yoshihiro Ohta, Tsutomu Yokozawa
J. Polym. Sci., Version of Record online:14 March 2021
https://doi.org/10.1002/pol.20210057
・エステル/アルコール間交換よりエステル/エステル間の交換が速いことを見いだしポリマー合成に応用

Interfacial Reaction Induced Disruption and Dissolution of Dynamic Polymer Networks
Bin Zhao, Qingqing Yuan, Hongkun Yang, Thomas P. Russell, and Dong Wang
Macromol. Rapid Commun., Version of Record online:18 March 2021
https://doi.org/10.1002/marc.202100023
・Si 基板上にアミノ末端 PS とエポキシ硬化物を順に積層、層間の高分子拡散と動的結合交換で界面接合

Enabling Superior Thermo–Oxidative Resistance Elastomers Based on a Structure Recovery Strategy
Xu Chen, Hui-Feng Zhang, Kai-Juan Li, Shuangquan Liao,* and Ming-Chao Luo*
Macromol. Rapid Commun., Version of Record online:15 March 2021
https://doi.org/10.1002/marc.202000762
・ジイソプロペニルベンゼン DIB で主鎖切断や架橋点分解を抑制してエラストマーの熱酸化防止を提案

Polymer Degradation
Toward Renewable and Functional Biomedical Polymers with Tunable Degradation Rates Based on Itaconic Acid and 1,8-Octanediol
Yufeng Shou, Scott B. Campbell, Angus Lam, Alexander J. Lausch, J. Paul Santerre, Milica Radisic,* and Locke Davenport Huyer*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 13, 2021
https://dx.doi.org/10.1021/acsapm.1c00017
・イタコン酸とアルカンジオールからポリエステル合成、分解特性評価のみで医用材料への応用は今後

Temperature dependent fracture behavior in model epoxy networks with nanoscale heterogeneity
*Matthew D. Eaton, L. Catherine Brinson, Kenneth R. Shull**
Polymer, Volume 221, 14 April 2021, 123560
https://doi.org/10.1016/j.polymer.2021.123560
・エポキシ硬化系に末端アミノ化 PPO 添加相分離で不均一構造を形成した硬化物の破壊挙動の温度依存

Bio-based & Biomedical Polymers
A Combined Theoretical and Experimental Study of the Polymer Matrix-Mediated Stress Transfer in a Cellulose Nanocomposite
Anna Peterson, Aleksandar Y. Mehandzhiyski, Leo Svenningsson, Agnieszka Ziolkowska, Roland Kádár, Anja Lund, Linda Sandblad, Lars Evenäs, Giada Lo Re,* Igor Zozoulenko,* and Christian Müller*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 19, 2021
https://doi.org/10.1021/acs.macromol.0c02305
・セルロース/エチレン-アクリル酸共重合アイオノマーの複合体を延伸して相互間作用の増強で高強度化

Sustainable Thermoplastic Elastomers Derived from Lignin Bio-Oils via an ABA Triblock Copolymer Strategy
Xiaofan Chen, Zhou Zhou, Hao Zhang, Yipeng Mao, Zhenyang Luo, Xiang Li, and Ye Sha*
Macromol. Chem. Phys., Version of Record online:20 March 2021
https://doi.org/10.1002/macp.202100055
・リグニン分解物のからフェノール誘導体アクリル酸エステルの ATRP でトリブロック共重合体を合成

Polymer Materials
Amphiphilic Perfluoropolyether Copolymers for the Effective Removal of Polyfluoroalkyl Substances from Aqueous Environments
Xiao Tan, Jiexi Zhong, Changkui Fu, Huy Dang, Yanxiao Han, Petr Král, Jianhua Guo, Zhiguo Yuan, Hui Peng, Cheng Zhang,* and Andrew K. Whittaker*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 16, 2021
https://dx.doi.org/10.1021/acs.macromol.1c00096
・RAFT 重合で末端パーフルオロアルキル基 PEG 側鎖ポリメタクリレート合成、フッ素化合物取り込み

Ionic Transport and Robust Switching Properties of the Confined Self-Assembled Block Copolymer/Homopolymer in Asymmetric Nanochannels
Jian Wang,* Lang Liu, Guilong Yan, Yanchun Li, Yang Gao, Ye Tian,* and Lei Jiang
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 18, 2021
https://doi.org/10.1021/acsami.1c01682
・PS-b-P4VP/PS ブレンド系を pH 制御してイオン透過用ナノチャンネルの形成、電気特性を評価解析

Photoexpansion of Biobased Polyesters: Mechanism Analysis by Time-Resolved Measurements of an Amorphous Polycinnamate Hard Film
Kenji Takada, Katsuaki Yasaki, Sakshi Rawat, Kosuke Okeyoshi, Amit Kumar, Hideyuki Murata, and Tatsuo Kaneko*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 16, 2021
https://doi.org/10.1021/acsami.0c22922
・重縮合系ポリケイ皮酸エステル(ビニル重合ではない)の主鎖中二重結合を光異性化でフィルム形状変化

3D Printing Carbonaceous Objects from Polyimide Pyrolysis
Clay B. Arrington, Daniel A. Rau, Johanna A. Vandenbrande, Maruti Hegde, Christopher B. Williams, and Timothy E. Long*
ACS Macro Lett. 2021, 10, 412−41, Publication Date (Web): March 17, 2021
https://doi.org/10.1021/acsmacrolett.1c00032
・オルトフェニレンポリイミド前駆体(アミド酸)で 3D プリンター成形後にイミド化/焼結、サイズ収縮大

Crack- and Shrinkage-Free Ethylene-Bridged Polysilsesquioxane Film Prepared by a Hydrosilylation Reaction
Takashi Hamada,* Yuki Nakanishi, Kenta Okada, and Joji Ohshita*
ACS Omega, Articles ASAP (Article), Publication Date (Web): March 15, 2021
https://dx.doi.org/10.1021/acsomega.1c00183
・SQ をヒドロシリル化架橋してクラック/収縮なしのコーティングフィルム材料作製、構造/熱特性評価

One-step mild preparation of tough and thermo-reversible poly(vinyl alcohol) hydrogels induced by small molecules
Chuang Dong, Jiahua Zhou, Dongjian Shi, Yufang Song, Xi Yu, Weifu Dong, Mingqing Chen * and Daisaku Kaneko*
Chem. Commun., 2021, Advance Article, The article was first published on 12 Mar 2021
https://doi.org/10.1039/D1CC00578B
・PVA にヒドロキシ/カルボキシ基を含む低分子化合物を添加して効率よく高強度な熱可逆性ゲルを作製

Photo-controlled alignment and helical organization in main-chain liquid crystalline alternating polymers
Hirotoshi Sakaino, Brigitte A. G. Lamers, Stefan C. J. Meskers, E. W. Meijer, Ghislaine Vantomme
J. Polym. Sci., Version of Record online:14 March 2021
https://doi.org/10.1002/pol.20210057
・アゾエステル型メソゲンを含むオリゴ DMS の主鎖型液晶を光制御して配列構造を制御、CPL も確認

Polymer Structure & Physics

Unentangled Vitrimer Melts: Interplay between Chain Relaxation and Cross-link Exchange Controls Linear Rheology
Ralm G. Ricarte* and Sachin Shanbhag*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 17, 2021
https://doi.org/10.1021/acs.macromol.0c02530
・動的(交換可能)架橋点をもつポリマーネットワーク(Vitrimer)に対して条件付きの Rouse モデル適用検証

Large Sequence-Defined Supramolecules Obtained by the DNA Guided Assembly of Biohybrid Poly(phosphodiester)s
Tathagata Mondal, Maria Nerantzaki, Kevin Flesch, Capucine Loth, Mounir Maaloum, Yidan Cong, Sergei S. Sheiko, and Jean-Francois Lutz*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 17, 2021
https://doi.org/10.1021/acs.macromol.0c02581
・二重らせん形成能有/無シークエンスをトリブロックにして相互連結したポリマーを設計 AFM で評価

Dynamics of the Topological Network Formed by Movable Crosslinks: Effect of Sliding Motion on Dielectric and Viscoelastic Relaxation Behavior

Yu Kashiwagi, Osamu Urakawa,* Sheng Zhao, Yoshinori Takashima, Akira Harada, and Tadashi Inoue*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 15, 2021
https://dx.doi.org/10.1021/acs.macromol.0c02568
・ポリアクリル酸エチル/CD 系のスライドリングゲルの動的粘弾性と誘電緩和による CD の動的挙動解析

Thermal dissipation as both the strength and weakness of matter. A material failure prediction by monitoring creep
Tom Vincent-Dospital,* Renaud Toussaint,* Alain Cochard, Eirik G. Flekkøy and Knut Jørgen Måløy
Soft Matter, 2021, Advance Article, The article was first published on 18 Mar 2021
https://doi.org/10.1039/D0SM02089C
・ポリマー/無機酸化物/金属他の多種材料に対して熱クラック形成による材料破壊のモデルと実測値比較

Adhesion & Interface Science
Wetting of Two-Component Drops: Marangoni Contraction Versus Autophobing
Michiel A. Hack,*, Wojciech Kwiecinski,* Olinka Ramírez-Soto,* Tim Segers, Stefan Karpitschka, E. Stefan Kooij, and Jacco H. Snoeijer
Langmuir, Articles ASAP (Article), Publication Date (Web): March 18, 2021
https://doi.org/10.1021/acs.langmuir.0c03571
・水/1,2-ヘキサンジオール(界面活性剤的な挙動を示す)混合溶媒の濡れ性に及ぼすマランゴニ対流を議論

Tuning the Thermoresponsive Behavior of Surface-Attached PNIPAM Networks: Varying the Crosslinker Content in SI-ATRP
Sophia Thiele, John Andersson, Andreas Dahlin, and Rebekah L. N. Hailes*
Langmuir, Articles ASAP (Article), Publication Date Web): March 15, 2021
https://dx.doi.org/10.1021/acs.langmuir.0c03545
・ATRP で表面グラフトした PNIPPAM 温度応答性の架橋度(ビスアクリルアミド使用)依存性を QCMD 追跡

Time-Dependent Mechanical Response of Ice Adhesion on Aluminum Substrates
Marina Machado, Teresa Reilly, Vladimir Alvarado,* John Ackerman, Joseph Murphy, and William Rice
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 16, 2021
https://dx.doi.org/10.1021/acsami.0c22083
・Al 基板上の氷接着強度の温度/時間依存性評価して既存データと比較、強度は到達温度/昇温速度に依存

Material Adhesion through Direct Covalent Bond Formation Assisted by Noncovalent Interactions
Motofumi Osaki, Tomoko Sekine, Hiroyasu Yamaguchi, Yoshinori Takashima,* and Akira Harada*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 16, 2021
https://doi.org/10.1021/acsapm.1c0022
・界面での共有結合(アミド結合)と非共有結合(CD/Ad)生成併用型の異種材料接合のそれぞれの寄与を評価

On March 29, 2021

Reviews
Making ATRP More Practical: Oxygen Tolerance
Grzegorz Szczepaniak,* Liye Fu, Hossein Jafari, Kriti Kapil, and Krzysztof Matyjaszewski*
Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acs.accounts.1c00032
・Cu 系 ATRP は 25 年以上進化を続け、グルコース酸化酵素を利用して酸素存在下でも制御重合が可能に

PET-RAFT Polymerization: Mechanistic Perspectives for Future Materials
Michael L. Allegrezza and Dominik Konkolewicz*
ACS Macro Lett. 2021, 10, 433−446, Articles ASAP (Viewpoint)、 Publication Date (Web): March 24, 2021
https://doi.org/10.1021/acsmacrolett.1c00046
・光誘起 1 電子移動制御 RAFT 重合に絞って最近の研究展開と議論のポイントをメカニズムを中心に集約

Deuteration and Polymers: Rich History with Great Potential
Lengwan Li, Jacek Jakowski, Changwoo Do, and Kunlun Hong*
Macromolecules, Articles ASAP (Perspective), Publication Date (Web): March 20, 2021

https://doi.org/10.1021/acs.macromol.0c02284
・重水素化ポリマーと散乱実験による構造解析に関する長い歴史を振り返りつつ現在の立場から解説

Recent progress in the shape deformation of polymeric hydrogels from memory to actuation
Baoyi Wu, Huanhuan Lu, Xiaoxia Le, Wei Lu, Jiawei Zhang,* Patrick Theato and Tao Chen*
Chem. Sci., 2021, Advance Article; The article was first published on 24 Mar 2021
https://doi.org/10.1039/D0SC07106D
・アクチュエーター/ソフトロボット向けのハイドロゲルの刺激応答形状変化花盛り、形状記憶は過去形

Stimuli-responsive nanobubbles for biomedical applications
Ranhua Xiong, Ronald X. Xu, Chaobo Huang,* Stefaan De Smedt* and Kevin Braeckmans*
Chem. Soc. Rev., 2021, Advance Article; The article was first published on 22 Mar 2021
https://doi.org/10.1039/C9CS00839J
・メディカル応用に絞ったナノバブル関連研究を解説、他分野でも活用できそうでブーム到来の予感が

Recent Advances of Molecularly Imprinted Polymers Based on Cyclodextrin
Xiaoyue Zhao, Yong Wang,* Pan Zhang, Zhemiao Lu, and Yin Xiao*
Macromol. Rapid Commun., Version of Record online: 22 March 2021
https://doi.org/10.1002/marc.202100004
・CD を分子インプリンティングに応用した最近 5 年分の研究だけに対象を絞ってコンパクトに集約解説

Recent Advances in Stimuli-Responsive Commodity Polymers
Siyang Wang, Qianhui Liu, Lei Li, and Marek W. Urban
Macromol. Rapid Commun., Version of Record online: 22 March 2021
https://doi.org/10.1002/marc.202100054
・力学/光/磁場/電場/酵素/糖/CO2/レドックス/水/熱/pH に応答する各種汎用ポリマーごとに全体像を俯瞰

Polymer Synthesis

Melt Processable Novolac Cyanate Ester/Biphenyl Epoxy Copolymer Series with Ultrahigh Glass-Transition Temperature
Jiaxiong Li, Chao Ren, Zhijian Sun, Yanjuan Ren, Haksun Lee, Kyoung-sik Moon, and Ching-Ping Wong*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 23, 2021
https://doi.org/10.1021/acsami.0c20537
・SiC 対応 300℃超の高 Tg エポキシ硬化物、ビフェニルエポキシをノボラックシアン酸エステルで硬化

Diarylethene-Powered Light-Induced Folding of Supramolecular Polymers
Takuya Fukushima, Kenta Tamaki, Atsushi Isobe, Takashi Hirose, Nobutaka Shimizu, Hideaki Takagi, Rie Haruki, Shin-ichi Adachi, Martin J. Hollamby, and Shiki Yagai*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): March 23, 2021
https://doi.org/10.1021/jacs.1c00592
・昨夏話題になったオリンピック分子合成の関連研究で、特殊な構造形成は偶然ではなく機構を解明

Effects of Thiol Substitution on the Kinetics and Efficiency of Thiol-Michael Reactions and Polymerizations
Katelyn F. Long, Howard Wang, Trace T. Dimos, and Christopher N. Bowman*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 24, 2021
https://doi.org/10.1021/acs.macromol.0c02677
・ネットワークポリマー合成に用いる塩基触媒アニオン機構のチオールのマイケル付加の反応解解析

Low ppm CuBr-Triggered Atom Transfer Radical Polymerization under Mild Conditions
Richard Whitfield, Kostas Parkatzidis, Kate G.E. Bradford, Nghia P. Truong, Dominik Konkolewicz,* and Athina Anastasaki*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acs.macromol.0c02519
・微量の CuBr を使用して室温で進行する ATRP 系を開発し、99%重合率で多分散度 1.05 まで制御可能

Kinetically controlled synthesis of supramolecular block copolymers with narrow dispersity and tunable block lengths
Aritra Sarkar, Ranjan Sasmal, Angshuman Das, Sarit S. Agasti and Subi J. George*

Chem. Commun., 2021, Advance Article; The article was first published on 17 Mar 2021
https://doi.org/10.1039/D1CC00332A
・超分子リビング重合のブロック共重合体の合成反応制御、構造化照明顕微鏡(SIM)で高分子鎖直接観察

RAFT polymerisation of trifluoroethylene: the importance of understanding reverse additions
Vincent Bouad, Marc Guerre, Cédric Totée, Gilles Silly, Olinda Gimello, Bruno Améduri, Jean-François Tahon, Rinaldo Poli, Sophie Barrau and Vincent Ladmiral*
Polym. Chem., 2021, Advance Article; The article was first published on 15 Mar 2021
https://doi.org/10.1039/D0PY01754J
・トリフルオロエチレンの RAFT 重合(初)、フルオロオレフィン制御重合は難しいため成功例はかなり稀

Polymerization-Induced Vitrification and Kinetic Heterogenization at the Onset of the Trommsdorff Effect
Yasuhito Suzuki,* Yuya Shinagawa, Eri Kato, Ryutaro Mishima, Koji Fukao, and Akikazu Matsumoto
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 25, 2021
https://doi.org/10.1021/acs.macromol.0c02260
・MMA バルク重合の Trommsdorff 効果に真正面から取り組んで新現象発見＆機構解明、続編さらに期待

Chemo- and Stereoselective Polymerization of Polar Divinyl Monomers by Rare-Earth Complexes
Zhaohe Liu, Bo Liu, Zhongfu Zhao,* and Dongmei Cui*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 26, 2021
https://doi.org/10.1021/acs.macromol.1c00009
・ジビニルベンゼンの芳香環と片方のビニル基間にオキシメチレン基挿入でスチリルだけ選択的に重合

Polymer Degradation

Poly(4-styrenesulfonic acid): A recoverable and reusable catalyst for acid hydrolysis of polyethylene terephthalate
Hossein Abedsoltan, Ibeh S. Omodolor, Ana C. Alba-Rubio**, Maria R. Coleman
Polymer, Volume 222, 123620, published on 22 April 2021
https://doi.org/10.1016/j.polymer.2021.123620
・ポリスチレンスルホン酸を PET 加水分解用の酸触媒として活用、回収可能で少なくとも 5 回再生利用

Bio-based & Biomedical Polymers

Castor Oil-Based Bioplastics via Polyesterification: Synthesis, Characterization, and Functionalization
Jun-Lin Pan, Chu-Ran Xu, Fu-Rong Zeng, Yang Liang, Tao Zhang, Jing Xu,* Zi-Long Li,* and Zi-Chen Li
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acsapm.1c00109
・ひまし油原料のポリエステル合成、ω-ブロモ長鎖アルキルカルボン酸を直接縮合、共重合で物性制御

Dendron-Functionalized Polyglutamate-Pyropheophorbide-a Conjugates as Nanomedicines for Breast Cancer Photodynamic Therapy
Wenjia Wang, Qianfeng Zhang, Zhiqian Li, Jing Zhang, Dayi Pan, Bing Wang, Hongyan Zhu, Hu Zhang, Zhongwei Gu, and Kui Luo*
Macromol. Rapid Commun., Version of Record online: 24 March 2021
https://doi.org/10.1002/marc.202100013
・デンドロンをグラフトしたポリグルタル酸を癌治療の光線力学的療法用ドラッグキャリアとして利用

Polymer Materials

Overall Structure Construction of an Intervertebral Disk Based on Highly Anisotropic Wood Hydrogel Composite Materials with Mechanical Matching and Buckling Buffering
Jinming Liu, Dingqian Wang, Yanyan Li, Ziqi Zhou, Dongyue Zhang, Jianshu Li,* and Hetao Chu*
CS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 23, 2021
https://doi.org/10.1021/acsami.1c02487
・椎間(ついかん)板模倣材料をアクリルアミドヒドロゲル/セルロース複合材料で作製、材料強度中程度

Stretchable and Healable Conductive Elastomer Based on PEDOT:PSS/Natural Rubber for Self-Powered Temperature and Strain Sensing
Yan Yang, Guojie Zhao, Xi Cheng, Hua Deng,* and Qiang Fu*
ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): March 22, 2021

https://doi.org/10.1021/acsami.1c00879
・PEDOT/PSS を天然ゴムと組みあわせて伸縮性シートを作製して電源内蔵型の温度/歪センサーに応用

Strong, tough, transparent and highly heat-resistant acrylic glass based on nanodiamond
Seira Morimune-Moriya*, Takashi Nishino
Polymer, Volume 222, 123661, published on 22 April 2021
https://doi.org/10.1016/j.polymer.2021.123661
・ナノダイアモンドをアクリル樹脂に分散して複合材料化、強度/熱伝導性向上、着色するが透明性保持

Functionalized acrylic polyhydroxy urethanes as molecular tool box for Photocurable thermosets and 3D printing
Hannah Buchheit, Bernd Bruchmann, Klaus Stoll, Rolf Mülhaupt
J. Polym .Sci., Version of Record online: 24 March 2021
https://doi.org/10.1002/pol.20210115
・液状ウレタン(メタ)アクリレートを 3D プリンター光硬化樹脂利用、ヒドロキシ基修飾で反応性基導入

Block-Random Copolymer-Micellization-Mediated Formation of Polymeric Patches on Gold Nanoparticles
Yiqun Yang, Chenglin Yi, Xiaozheng Duan, Qi Wu, Yan Zhang, Jing Tao, Wenhao Dong, and Zhihong Nie*
Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): March 26, 2021
https://doi.org/10.1021/jacs.1c00310
・チオール末端のトリブロック共重合体と界面活性剤を用いて金ナノ微粒子と複合化生成物の形状制御

Macroscopic materials assembled from nanoparticle superlattices
Peter J. Santos, Paul A. Gabrys, Leonardo Z. Zornberg, Margaret S. Lee & Robert J. Macfarlane
Nature **591,** 586–591 (2021); published on 24 March 2021
https://doi.org/10.1038/s41586-021-03355-z
Nature ハイライト：ナノスケールの秩序を持つ巨視的な固体
・ポリマー被覆金属ナノ粒子を自己集合して超格子形成、μmサイズ結晶子形成、加工して任意構造形成

Polymer Structure & Physics
Weak Shear-Induced Slowdown in Crystallization of Less-Entangled Poly(ε-caprolactone)
Xiang Liu and Wei Yu*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 24, 2021
https://doi.org/10.1021/acs.macromol.1c00204
・絡み合いの少ないポリエステルとそのブレンド系の結晶化過程を解析、せん断速度との関係を議論

Speed-Induced Extensibility Elastomers with Good Resilience and High Toughness
Haiming Chen, J. Justin Koh, Chuanjiang Long, Siqi Liu, Huihui Shi, Jiakang Min, Lili Zhou, and Chaobin He*
Macromolecules, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acs.macromol.1c00175
・非相溶 PDMS/PPG 系エラストマーの伸長度が速度依存して増大 9000%伸びを達成、破断防止機構も

Sound damping in soft particle packings: the interplay between configurational disorder and inelasticity
Kuniyasu Saitoh* and Hideyuki Mizuno
*Soft Matter***,** 2021, Advance Article; The article was first published on 19 Mar 2021
https://doi.org/10.1039/D0SM02018D
・ソフト微粒子を充填した系でエネルギー散逸によって防音効果に対する不均一性と非弾性効果を議論

Separate crystallization and melting of polymer blocks and hydrogen bonding units in double-crystalline supramolecular polymers
Xing Li, Wenqing Xu, Wenhua Yuan, Kangkang Liu, Jian Zhou, Guorong Shan, Yongzhong Bao, Pengju Pan
Polymer, Volume 222, 123670, published on 22 April 2021
https://doi.org/10.1016/j.polymer.2021.123670
・ポリカプロラクトン末端に UPy 基を導入してポリマー鎖と末端の結晶/融解挙動をそれぞれ独立に観察

Strain induced strengthening of soft thermoplastic polyurethanes under cyclic deformation
Giorgia Scetta, Jianzhu Ju, Nathan Selles, Patrick Heuillet, Matteo Ciccotti, Costantino Creton
J. Polym .Sci., Version of Record online: First Published: 21 March 2021
https://doi.org/10.1002/pol.20210060

・繰り返し変形中に高強度化するポリウレタンエラストマーの SS 曲線を解析して高強度化の機構を議論

Adhesion & Interface Science

Effects of Initially Adsorbed Proteins on Substrate Surfaces during Multilayer Heterogeneous Protein Adsorption
Atsunori Sonoi,* Ippei Furikado, and Kazuhiko Ishihara*
Langmuir, Articles ASAP (Article), Publication Date (Web): March 24, 2021
https://doi.org/10.1021/acs.langmuir.1c00091
・基材上のタンパク質の複合的吸着に対する第 1 層目の BSA の働きを歯のモデルを使用して QCM で検証

Crystal Engineering & Liquid Crystals

Stimuli-Responsive Biomimetic Metallic Luster Films Using Dye Absorption and Specular Reflection from Layered Microcrystals
Yuki Kojima, Keiki Kishikawa, Shuji Ichikawa, Jun Matsui, Keita Hirai, Yukishige Kondo, and Michinari Kohri*
ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acsapm.0c01396
・昆虫の表面構造を模倣して PDA を色素として利用した積層体の表面選択反射で金属光沢型の表面再現

2,5-Dibromothiophenes: Halogen Bond Involving Packing Patterns and Their Relevance to Solid-State Polymerization
Sergey V. Baykov, Sofia I. Presnukhina, Alexander S. Novikov, Anton A. Shetnev, Vadim P. Boyarskiy, and Vadim Yu. Kukushkin*
Crystal Growth & Design, Articles ASAP (Article), Publication Date (Web): March 22, 2021
https://doi.org/10.1021/acs.cgd.1c00184
・固相重合による PEDOT 合成、反応挙動や機構に未解明部分が多いが、溶媒フリーの固相反応系の 1 種

以上