

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

On February 1, 2021

Reviews

Oriented Attachment: From Natural Crystal Growth to a Materials Engineering Tool

Published as part of the Accounts of Chemical Research special issue "Transformative Inorganic Nanocrystals"
Bastiaan B. V. Salzmann, Maaïke M. van der Sluijs, Giuseppe Soligno, and Daniel Vanmaekelbergh*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): January 27, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00739>

- ・無機ナノ結晶対象の配列制御だが、発想は有機結晶成長/微粒子配列/MOF 重合制御のヒント多し

100th Anniversary of Macromolecular Science Viewpoint: User's Guide to Supramolecular Peptide-Polymer Conjugates

Julia Y. Rho* and Sebastien Perrier*

ACS Macro Lett. 2021, 10, 258-271, Articles ASAP (Viewpoint), Publication Date (Web): January 25, 2021

<https://dx.doi.org/10.1021/acsmacrolett.0c00734>

- ・環状オリゴペプチド/合成ポリマーコンジュゲートの超分子構造形成、著者はもともと高分子合成専門

Polymeric Tissue Adhesives

Sungmin Nam and David Mooney*

Chemical Reviews, Articles ASAP (Review), Publication Date (Web): January 28, 2021

<https://dx.doi.org/10.1021/acs.chemrev.0c00798>

- ・生体組織用接着剤を網羅、バイオマテリアル/接着のそれぞれに関わる人は必読、基礎的事項も解説

Synthesis and Shaping of Core-Shell Tecto Dendrimers for Biomedical Applications

Shewaye Lakew Mekuria, Cong Song, Zhijun Ouyang, Mingwu Shen,* Anna Janaszewska, Barbara Klajnert-Maculewicz,* and Xiangyang Shi*

Bioconjugate Chemistry, Articles ASAP (Topical Review), Publication Date (Web): January 18, 2021

<https://dx.doi.org/10.1021/acs.bioconjchem.1c00005>

- ・PAMAM テクト dendrimer (共有結合/分子間カコアシエル形成)のバイオイメージング/化学治療応用

Cucurbit[n]uril-Based Supramolecular Frameworks Assembled through Outer-Surface Interactions

Ying Huang, Rui-Han Gao, Ming Liu, Li-Xia Chen, Xin-Long Ni, Xin Xiao, Hang Cong, Qian-Jiang Zhu, Kai Chen,* and Zhu Tao*

Angew. Chem. Int. Ed. 2021, 60, 2-28, Version of Record online: 29 January 2021 (First published: 24 April 2020)

<https://doi.org/10.1002/anie.202002666>

- ・以前紹介ククルビット(グルコールウリル環状オリゴマー)に関する総説が最近になって掲載(別総説?)

Molecular dynamics and structure of polyrotaxane in solution

Koichi Mayumi

Polymer Journal (Focus Review), Published 27 January 2021

<https://doi.org/10.1038/s41428-020-00457-9>

- ・CD ポリロタキサン溶液分子ダイナミクスに関連する自身の研究センターにコンパクトにまとめた総説

Electronic effects of nano-confinement in functional organic and inorganic materials for optoelectronics

Jongkuk Ko, Rudiger Berger, Hyemin Lee, Hyunsik Yoon,* Jinhan Cho* and Kookheon Char*

Chem. Soc. Rev., 2021, Advance Article, The article was first published on 29 Jan 2021

<https://doi.org/10.1039/D0CS01501F>

- ・無機粒子やポリマー集合体のナノ空間での集積プロセス制御でオプトエレクトロニクス特性を制御

Polymer Synthesis

Anionic Polymerization in Porous Organic Frameworks: A Strategy to Fabricate Anchored Polymers and Copolymers

Jacopo Perego, Silvia Bracco, Angiolina Comotti, Daniele Piga, Irene Bassanetti, and Piero Sozzani*

Angew. Chem. Int. Ed., Version of Record online: 28 January 2021 (First published: 01 December 2020)

<https://doi.org/10.1002/anie.202014975>

- ・COF 中でのアニオン重合、束縛空間内でのポリマー生成や COF 骨格の一部から開始する系などを含む

2,5-Dimethylfuran/Acrylonitrile as Latent Monomer for Sequence-Controlled Copolymer and Sequence-Dependent Thermo-Responsivity

Yang Gao, Liuqiao Zhang, Rui Jia, Zhihao Huang, Yujie Xie, Sunting Xuan, Nianchen Zhou, Zhengbiao Zhang,* and Xiulin Zhu

Macromol. Rapid Commun. 2021, 2000724, First published: 26 January 2021

DOI: [10.1002/marc.202000724](https://doi.org/10.1002/marc.202000724)

- ・フラン保護モノマー共重合中の同時脱保護でグラジエントポリマー合成、ブロックと相転移挙動比較

A Toughening and Anti-Counterfeiting Benzotriazole-Based High-Performance Polymer Film Driven by Appropriate Intermolecular Coordination Force

Liang Cao, Li Yang,* Yewei Xu, Qiang Yin,* Ying Huang, and Guanjun Chang*

Macromol. Rapid Commun. 2021, 2000617, Version of Record online:25 January 2021

DOI: [10.1002/marc.202000617](https://doi.org/10.1002/marc.202000617)

- ・Cu 錯体と側鎖配位子間の動的分子間架橋によって高強度化と強靱化を同時達成(したと著者らは強調?)

Stereocontrolled radical polymerization of acrylamides by ligand accelerated catalysis

Beomsu Park, Yuji Imamura, Shigeru Yamago

Polymer Journal, Published on 14 December 2020

<https://doi.org/10.1038/s41428-020-00444-0>

- ・TERP によるアクリルアミド制御重合、Yb(OTf)₃ と組み合わせた結果だけに絞ってシンプルに纏めた論文

Synthesis and Properties of Epoxy Resin Modified with Novel Reactive Liquid Rubber-Based Systems

Rafał Januszewski,* Michał Dutkiewicz, Marek Nowicki, Mariusz Szotyga, and Ireneusz Kownacki

Industrial & Engineering Chemistry Research, Articles ASAP, Publication Date (Web): January 26, 2021

<https://dx.doi.org/10.1021/acs.iecr.0c05781>

- ・エポキシ樹脂に反応性液状ジエンポリマー添加して物性改善、単純な合成でも海島構造形成で効果的

Polymer Degradation

Fully Recyclable Polycarbonates from Simple, Bio-Derived Building Blocks

Christopher D. Roland, Cameron M. Moore,* Juan H. Leal, Troy A. Semelsberger, Charlotte Snyder, Jakub Kostal, and Andrew D. Sutton*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): January 28, 2021

<https://dx.doi.org/10.1021/acsapm.0c01028>

- ・アセタール構造(バイオ由来化合物から誘導)の繰り返しのポリカーボネートを合成、熱水中容易に分解

Synthesis and characterization of fully biobased polyesters with tunable branched architectures

Nejib Kasmi, Catherine Pinel, Denilson Da Silva Perez, Reiner Dieden and Youssef Habibi *

Polym. Chem., 2021, Advance Article, The article was first published on 21 Jan 2021

<https://doi.org/10.1039/D0PY01512A>

- ・糖由来トリオール/バイオベースジカルボン酸で分解性アセタール型ポリエステル合成、類似戦略多い

Synthesis of thermoplastic elastomers with high biodegradability in seawater

Lamya Zahir, Takumitsu Kida, Ryo Tanaka, Yuushou Nakayama, Takeshi Shiono, Norioki Kawasaki, Naoko Yamano, Atsuyoshi Nakayama

Polymer Degradation and Stability, Volume 184, February 2021, 109467

<https://doi.org/10.1016/j.polymdegradstab.2020.109467>

- ・ポリ乳酸とその他ポリエステルとのブロックポリマーの T_g/T_m 制御と海水中での分解性(28 日間)を評価

Thermal degradation behavior of poly[(R)-3-hydroxybutyrate-co-4-hydroxybutyrate]

Taku Omura, Tatsuya Goto, Akira Maehara, Satoshi Kimura, Hideki Abe, Tadahisa Iwata

Polymer Degradation and Stability, Volume 183, January 2021, 109460

<https://doi.org/10.1016/j.polymdegradstab.2020.109460>

- ・生分解性ポリマーの研究開発をリードする東大グループからのポリエステル熱分解特性に関する論文

Synthesis, Crystallization, Structure Memory Effects, and Molecular Dynamics of Biobased and Renewable Poly(n-alkylene succinate)s with n from 2 to 10

Panagiotis A. Klonos,* Lazaros Papadopoulos, Maria Kasimatis, Hermis Iatrou, Apostolos Kyritsis, and Dimitrios N. Bikiaris*

Macromolecules, Articles ASAP (Article), Publication Date (Web): January 27, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02109>

- ・特に特徴ないポリコハク酸エステルでもしっかりキャラクタリゼーションすれば論文が成立する例

Polymer Materials

Hydrogen Bond Enhances Photomechanical Swing of Liquid Crystalline Polymer Bilayer Films

Jianchuang Wang, Shuai Huang, Yihe Zhang,* Jingang Liu, Mingming Yu, and Haifeng Yu*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): January 29, 2021

<https://dx.doi.org/10.1021/acsami.0c18449>

- ・既存型の光応答性高分子液晶材料の応用の一例、水素結合で応力伝達補強して光-力学変換効率アップ

Photodegradable Polyacrylamide Gels for Dynamic Control of Cell Functions

Sam C. P. Norris, Jennifer Soto, Andrea M. Kasko,* and Song Li*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): January 27, 2021

<https://dx.doi.org/10.1021/acsami.0c19627>

- ・アクリルアミドゲルの架橋点に光分解性 *o*-ニトロベンジル基を導入して機械特性と細胞応答を光制御

Synthesis and Characterization of Dendritic and Linear Glycol Methacrylates and Their Performance as Marine Antifouling Coatings

Robin Wanka, Florian Koschitzki, Vuk Puzovic, Thorben Pahl, Emily Manderfeld, Kelli Z. Hunsucker, Geoffrey W. Swain, and Axel Rosenhahn*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): January 26, 2021

<https://dx.doi.org/10.1021/acsami.0c21212>

- ・直鎖と分岐状の PEG と PPG 鎖を含むボトルブラシポリマーでコーティングして海水中での防汚効果

Effect of Thiocarbonylthio Compounds on Visible-Light-Mediated 3D Printing

Zhiheng Zhang, Nathaniel Corrigan,* and Cyrille Boyer*

Macromolecules, Articles ASAP (Article), Publication Date (Web): January 29, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02691>

- ・著者らも 3D プリンティング分野に進出、光制御型 RAFT 重合をフル活用、開始剤の構造特性は重要

High-Performance Flexible Transparent Conductive Films Enabled by a Commonly Used Antireflection

Layer Liwen Zhang, Ya Liu, Liangliang Li, Liubiao Zhong, Ke Wang, Wei Gan, and Yejun Qiu*

ACS Applied Materials & Interfaces 2021, 13, 2, 2979-2987 (2021), Publication Date (Web): December 22, 2020

<https://dx.doi.org/10.1021/acsami.0c16542>

- ・銀ナノワイヤ分散導電性透明ポリマーフィルムシリカナノ粒子を用いる反射防止表面処理あれこれ

Polymer Structure & Physics

Viscoelastic Properties of Dumbbell-Shaped Polystyrenes in Bulk and Solution

Yuya Doi,* Atsushi Takano,* Yoshiaki Takahashi,* and Yushu Matsushita

Macromolecules, Articles ASAP (Article), Publication Date (Web): January 26, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02050>

- ・精密合成した絡み合いポリマー溶融体のレオロジー解析、精密合成と物性評価を同時進行(共同研究)

Adhesion & Interfaces

Fast-Curing Mussel-Inspired Adhesive Derived from Vegetable Oil

Gaoyan Xiong, Wenjuan Xiong, Siwen Dai, Mei Lin, Guozheng Xia, Xiaobo Wan, and Youbing Mu*

ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): January 25, 2021

<https://dx.doi.org/10.1021/acsabm.0c01245>

- ・エポキシ化大豆油をアクリル化、DHA の反応でカテコール構造導入、短時間光硬化用の樹脂を合成

Highly Transparent, Robust Hydrophobic, and Amphiphilic Organic-Inorganic Hybrid Coatings for Antifogging and Antibacterial Applications

Yubin Jeon, Saravanan Nagappan, Xi-Hui Li, Joon-Hee Lee, Liyi Shi, Shuai Yuan, Won-Ki Lee, and Chang-Sik Ha*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): January 28, 2021

<https://dx.doi.org/10.1021/acsami.0c20401>

- ・著者が得意の有機無機ハイブリッドコーティングで機能化、ここでは透明・防曇・抗菌性に特に着目

Poly[oligo(2-ethyl-2-oxazoline) methacrylate] as a surface modifier for bioinertness

Jin-Hyeok Hong, Masayasu Totani, Daisuke Kawaguchi, Norifumi L. Yamada, Hisao Matsuno, Keiji Tanaka

Polymer Journal, Published on 20 January 2021

<https://doi.org/10.1038/s41428-020-00459-7>

- ・生体適合性合成ポリマー(アクリレート、メタクリレート系)ラインナップ拡張中、今後使い分け重要に

Enhancing strength and toughness of adhesive joints via micro-structured mechanical interlocking

Alex Hamilton, Yang Xu, Mehmet E. Kartal, Nikolaj Gadegaard, Daniel M. Mulvihill

International Journal of Adhesion and Adhesives, Volume 105, March 2021, 102775

<https://doi.org/10.1016/j.ijadhadh.2020.102775>

- ・接着界面のマイクロメートルオーダーの凹凸形状の影響を評価するための機械系での研究アプローチ

Crystal Engineering & Liquid Crystal

Capturing the Moment of Emergence of Crystal Nucleus from Disorder

Takayuki Nakamuro, Masaya Sakakibara, Hiroki Nada, Koji Harano, and Eiichi Nakamura*

Journal of the American Chemical Society, Articles ASAP, Publication Date (Web): January 21, 2021

<https://dx.doi.org/10.1021/jacs.0c12100>

- ・NaCl 結晶化のための核形成平衡プロセスを CNT 内先端で原子レベル分解能 TEM 実時間可視化に成功

<https://www.s.u-tokyo.ac.jp/ja/press/2021/7211/>

Bio-based & Biomedical Polymers

Wholly Biobased, Highly Stretchable, Hydrophobic, and Self-healing Thermoplastic Elastomer

Yeyen Nurhamiyah, Amalina Amir, Marie Finnegan, Efrosyni Themistou, Mohan Edirisinghe, and Biqiong Chen*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): January 26, 2021

<https://dx.doi.org/10.1021/acsami.0c23155>

- ・脂肪ジアミン誘導体 Priamine1075 とジカルボン酸誘導体 Pripol1009 を原料に 2000%伸張自己修復ゲル

Sustainable block copolymers of poly(limonene carbonate)

Simon Neumann, Sophia Barbara Däbritz, Sophie Edith Fritze, Lisa-Cathrin Leitner, Aneesha Anand, Andreas Greiner and Seema Agarwal*

Polym. Chem., 2021, Advance Article, The article was first published on 22 Jan 2021

<https://dx.doi.org/10.1039/D0PY01685C>

- ・リモネンオキシド/CO₂ アニオン開環重合でバイオベースポリカーボネート、PLA ブロックポリマーも

General Chemistry & Others

Plasmon-Enhanced Hydrogenation of 1-Dodecene and Toluene Using Ruthenium-Coated Gold Nanoparticles

Luis Carlos de la Garza, Nicolas Brodusch, Raynald Gauvin,* and Audrey Moores*

ACS Applied Nano Materials, Articles ASAP (Article), Publication Date (Web): January 26, 2021

<https://dx.doi.org/10.1021/acsanm.0c03077>

- ・水素燃料電池に必須の水素貯蔵用トルエン/MCH 変換の高活性触媒 Au@Ru、Au プラズマ処理で活性化

Rectification in Molecular Tunneling Junctions Based on Alkanethiolates with Bipyridine–Metal Complexes

Junwoo Park, Lee Belding, Li Yuan, Maral P. S. Mousavi, Samuel E. Root, Hyo Jae Yoon, and George M. Whitesides*

Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): January 22, 2021

<https://dx.doi.org/10.1021/jacs.0c12641>

- ・著者(現在 81 歳)は今も現役で論文を書いている！名前を知らない人は過去の業績を調べてみることに

Evolution of the Diels–Alder Reaction Mechanism since the 1930s: Woodward, Houk with Woodward, and the Influence of Computational Chemistry on Understanding Cycloadditions

Kendall N. Houk,* Fang Liu, Zhongyue Yang, and Jeffrey I. Seeman*

Angew. Chem. Int. Ed., First published: 13 July 2020

<https://doi.org/10.1002/anie.202001654>

- ・Diels–Alder 反応とウッドワードの研究全体の歴史がよくわかる、Houk 自身も伝説に近づきつつある？

On February 8, 2021

Reviews

Replication of Sequence Information in Synthetic Oligomer

Diego Nuñez-Villanueva and Christopher A. Hunter*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 6, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00852>

・効率よくオリゴマー複製を行うシステムを提案、連鎖重合のシーケンス制御とは異なる目的・手法

Data-Driven Strategies for Accelerated Materials Design

Published as part of the *Accounts of Chemical Research* special issue “Data Science Meets Chemistry”

Robert Pollice, Gabriel dos Passos Gomes, Matteo Aldeghi, Riley J. Hickman, Mario Krenn, Cyrille Lavigne, Michael Lindner-D’Addario, AkshatKumar Nigam, Cher Tian Ser, Zhenpeng Yao, and Alan Aspuru-Guzik*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 2, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00785>

・データサイエンスの化学への応用特集用の原稿、材料設計とデータサイエンスの関係を概念的に整理

Cyclodextrin Metal–Organic Frameworks and Their Applications

Indranil Roy and J. Fraser Stoddart*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 1, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00695>

・ γ -CD で MOF を作製、ありそうで意外になかった研究の展開、CD の化学修飾で集積構造と機能を開拓

Polymer Materials for Respiratory Protection: Processing, End Use, and Testing Methods

Ilaria Armentano,* Marco Barbanera, Eleonora Carota, Silvia Crognale, Marco Marconi, Stefano Rossi, Gianluca Rubino, Mauro Scungio, Juri Taborri, and Giuseppe Calabrò

ACS Applied Polymer Materials, Articles ASAP (Review), Publication Date (Web): February 4, 2021

<https://dx.doi.org/10.1021/acsapm.0c01151>

・COVID-19 対策に欠かせない不織布マスクを素材・加工・抗菌・試験方法・再利用の観点で再分析整理

Advances, Challenges, and Opportunities of Poly(γ -butyrolactone)-Based Recyclable Polymers

Yihuan Liu, Jiaqi Wu, Xin Hu,* Ning Zhu,* and Kai Guo

ACS Macro Lett. 2021, 10, 284–296

<https://dx.doi.org/10.1021/acsmacrolett.0c00813>

・環状エステル・環状カーボネートの重合/共重合、重合触媒、ポリマー物性、リサイクルの観点で整理

Properties and applications of precision oligomer materials; where organic and polymer chemistry join forces

Bas van Genabeek, Brigitte A. G. Lamers, Craig J. Hawker, E. W. Meijer, Will R. Gutekunst, Bernhard V. K. J. Schmidt
Journal of Polymer Science, First published: 02 February 2021

DOI: 10.1002/pol.20200862

・有機合成化学的手法を活用してオリゴマーを精密設計、ポリマー材料設計に応用する新手法の提案

Topochemical polymerizations for the solid-state synthesis of organic polymers

Kuntrapakam Hema, Arthi Ravi, Cijil Raju, Javed R. Pathan, Rishika Rai and Kana M. Sureshan*

Chem. Soc. Rev., 2021, Advance Article, The article was first published on 05 Feb 2021

<https://doi.org/10.1039/DOCS00840K>

・久々のトポケミカル重合の網羅的総説、ジアセチレン/ジエンも満載、最近のクリック関連もカバー

Mechanochemical tools for polymer materials

Yinjun Chen, Gaëlle Mellot, Diederik van Luijk, Costantino Creton* and Rint P. Sijbesma

Chem. Soc. Rev., 2021, Advance Article, The article was first published on 05 Feb 2021

<https://doi.org/10.1039/DOCS00940G>

・メカノケミカル手法を利用したポリマー材料の変形/破壊/修復などに関わる話題を幅広く集約した総説

Advancing macromolecular hoop construction: recent developments in synthetic cyclic polymer chemistry

Teng-Wei Wang and Matthew R. Golder

Polym. Chem., 2021, Advance Article, The article was first published on 03 Feb 2021

<https://doi.org/10.1039/D0PY01655A>

・線状ポリマーの環化反応や環拡大重合による環状ポリマーについて合成に絞ったコンパクトな総説

Recent Progress on Nanocellulose Aerogels: Preparation, Modification, Composite Fabrication, Applications

Yiming Chen, Lin Zhang, Yang Yang, Bo Pang, Wenhui Xu, Gaigai Duan,* Shaohua Jiang,* and Kai Zhang

Advanced Materials, Version of Record online:03 February 2021

<https://doi.org/10.1002/adma.202005569>

・ CNF エアロゲルの合成、コンポジット化、バイオメディカル/エネルギー/吸着/センサーへの応用など

Recent Progress of Flexible Image Sensors for Biomedical Applications

Tomoyuki Yokota,* Kenjiro Fukuda, and Takao Someya

Advanced Materials, Version of Record online:01 February 2021

<https://doi.org/10.1002/adma.202004416>

・ フレキシブルセンサーのバイオメディカル応用、動的情報高速処理と静的情報高分解能が必要になる

Electrospinning for developing flame retardant polymer materials: Current status and future perspectives

Henri Vahabi,* Hao Wu, Mohammad Reza Saeb, Joseph H. Koo, Seeram Ramakrishna

Polymer, Volume 217, 5 March 2021, 123466

<https://doi.org/10.1016/j.polymer.2021.123466>

・ 難燃性ポリマー材料(繊維/コーティング/膜/コアシェル構造他)のエレクトロスピニングの現状と展望

Polymer Synthesis

Functional Polyethylenes by Organometallic-Mediated Radical Polymerization of Biobased Carbonates

Philip B. V. Scholten, Grégory Cartigny, Bruno Grignard, Antoine Debuigne, Henri Cramail, Michael A. R. Meier,* and Christophe Detrembleur*

ACS Macro Lett. 2021, 10, 313–320, Publication Date (Web): February 5, 2021

<https://dx.doi.org/10.1021/acsmacrolett.1c00037>

・ 植物原料由来の環状カーボネート構造を含むモノマーを E と Co 触媒制御ラジカル共重合し PE 機能化

Type I Photoinitiator-Functionalized Block Copolymer Nanoparticles Prepared by RAFT-Mediated Polymerization-Induced Self-Assembly

Yang Du, Shuai Jia, Ying Chen, Li Zhang, and Jianbo Tan*

ACS Macro Lett. 2021, 10, 297–306, Publication Date (Web): February 3, 2021

<https://dx.doi.org/10.1021/acsmacrolett.1c00014>

・ ATRP+PISA でブロック共重合体ナノ微粒子の形状制御、紫外照射ラジカル発生で表面修飾やゲル化形成

Cu-Catalyzed Atom Transfer Radical Polymerization in the Presence of Liquid Metal Micro/Nanodroplets

Qiangbing Wei, Mingkang Sun, Francesca Lorandi, Rongguan Yin, Jiajun Yan, Tong Liu, Tomasz Kowalewski, and Krzysztof Matyjaszewski*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 3, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02702>

・ Ga-In 合金のマイクロ/ナノドロップレットを利用して SARA-ATRP 触媒再生効率制御、触媒活性はまだ低い

Controllable Radical Polymerization of Selenide Functionalized Vinyl Monomers and Its Application in Redox Responsive Photonic Crystals

Shaoxiang Liu, Qilong Li, Yingying Li, Jiandong Zhang, Xiangqiang Pan,* Jian Zhu,* and Xiulin Zhu

Macromol. Rapid Commun. 2021, 2000764, First published: 05 February 2021

DOI: 10.1002/marc.202000764

・ Se 含有 St を RAFT 重合して PS-SiO₂ 微粒子を形成、酸化還元応答型フォトニッククリスタルへの応用

Preparation of Block Copolymer Nano-Objects with Embedded β -Ketoester Functional Groups by Photoinitiated RAFT Dispersion Polymerization

Jiayuan Huang, Dongdong Liu, Ying Chen, Li Zhang, and Jianbo Tan*

Macromol. Rapid Commun. 2021, 2000720, First published: 04 February 2021

DOI: 10.1002/marc.202000720

・ β ケトエステルを含むモノマーRAFT 分散重合で微粒子/ベシクル/紐状のブロックポリマー集合体形成

Molecular Weight Distribution of Two Types of Living Chains Formed during Nitroxide-Mediated Polymerization of Styrene

Kyoungho Kim, Jieun Lee, Hong Y. Cho, Eun Ho Lee, Seo-Hui Lee, Taihyun Chang,* Heung Bae Jeon,* and Hyun-jong Paik*

Macromol. Rapid Commun. 2021, 2000624, First published: 04 February 2021

DOI: 10.1002/marc.202000624

・ NMP で生成した Pst を構造の違いで分離して解析、自発開始や失活反応を含む反応機構と絡めて議論

Reduction-responsive double hydrophilic block copolymer nano-capsule synthesized via RCMP-PISA

Jit Sarkar, Kai Bin Jonathan Chan and Atsushi Goto

Polym. Chem., 2021, Advance Article, The article was first published on 03 Feb 2021

<https://doi.org/10.1039/D0PY01764G>

- ・ RCMP-PISA で両親水性ブロックポリマー集合体合成、PEGMA/PGLMA セグメント含有ベシクル特性解析

Polymer Degradation

Recycling Polyurethanes through Transcarbamylation

Liang Zhao and Vincent Semetey*

ACS Omega, Articles ASAP (Article), Publication Date (Web): February 3, 2021

<https://dx.doi.org/10.1021/acsomega.0c04855>

- ・ 使用済みポリウレタンを MeOH/THF 中塩基触媒でジオールとジカルバメートに分解再利用して PU 再生

Solid Rheological Properties of PBT-Based Vitrimers

L. Farge,* S. Hoppe, V. Daujat, F. Tournilhac, and S. André

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 2, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02105>

- ・ PBT にエポキシ樹脂と Zn 触媒を添加して変形破壊部分で結合交換して強度回復、Vitrimer 再定義が必要

Polymer Materials

All-Nanoparticle Monolayer Broadband Antireflective and Self-Cleaning Transparent Glass Coatings

Alexey Gruzd, Alexander Tokarev, Igor Tokarev, Dmitri Kuksenkov,* and Sergiy Minko*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 1, 2021

<https://dx.doi.org/10.1021/acsmi.0c18776>

- ・ 表面ナノ微粒子配列による反射防止に自己洗浄効果も、微粒子形状と透明性・波長依存性などを解析

How Shape Memory Effects can Contribute to Improved Self Healing Properties in Polymer Materials

Elizaveta V. Selezneva, Artem V. Bakirov, Nikita G. Sedush, Aleksandra V. Bystrova, Sergei N. Chvalun, Dan E. Demco, and Martin Möller*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 2, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02102>

- ・ アイオノマー(エチレン-メタクリル酸共重合体)と EPDM ゴムを組み合わせた形状記憶樹脂を自己修復に

Polymer Structure & Physics

Mapping Chemical Structure–Glass Transition Temperature Relationship through Artificial Intelligence

Luis A. Miccio* and Gustavo A. Schwartz*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 5, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02594>

- ・ 繰り返し構造と T_g の関係を予測するための多次元解析ツールを提案、一般化できるかは今後動向注目

Dynamical Comparison of Different Polymer Architectures Bottlebrush vs Linear Polymer

Karin J. Bichler,* Bruno Jakobi, and Gerald J. Schneider*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 3, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02104>

- ・ ボトルブラシと線状 PDMS のダイナミクスを誘電緩和と NMR データから比較、絡み合い挙動に違いが

Effect of Methoxy Side Groups on the Crystal Structures of a Series of Syndiotactic Polymethoxystyrenes as Studied by the X-ray Diffraction Data Analysis

Hai Wang,* Dongtao Liu, Dongmei Cui, Yongfeng Men, and Kohji Tashiro

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 2, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02577>

- ・ シジオタクチックポリスチレン誘導体(メトキシ置換体)の結晶構造解析、著者単著春出版予定(Springer)

Crystal Engineering & Liquid Crystal

Database Investigation of Halogen Bonding and Halogen…Halogen Interactions between Porphyrins: Emergence of Robust Supramolecular Motifs and Frameworks

Toni S. Spilfogel, Hatem M. Titi* and Tomislav Frisčić *

Crystal Growth & Design, Articles ASAP (Article), Publication Date (Web): February 5, 2021

<https://dx.doi.org/10.1021/acs.cgd.0c01697>

・ハロゲン-ハロゲンやハロゲン-O 間の相互作用には未解明な点が多く残されており、CSD を基に解析

On February 15, 2021

Reviews

Synthesis of Linear Polymers in High Molecular Weights via Reaction-Enhanced Reactivity of Intermediates Using Friedel-Crafts Polycondensation

Haifeng Gao*

ACS Omega, Articles ASAP (Mini-Review), Publication Date (Web): February 10, 2021

<https://dx.doi.org/10.1021/acsomega.0c06085>

・フリーデル・クラフツ反応を利用した重縮合反応によるポリマー合成だけに焦点をあてた珍しい総説

Robust superhydrophobicity: mechanisms and strategies

Wenluan Zhang, Dehui Wang, Zhengnan Sun, Jianing Song and Xu Deng *

Chem. Soc. Rev., 2021, Advance Article, The article was first published on 08 Feb 2021

<https://doi.org/10.1039/DOCS00751J>

・頑丈な超親水性表面の設計戦略/機能発現機構/材料設計を基礎的事項から応用まで広く網羅的に解説

Recent Advances in Functional Materials through Cellulose Nanofiber Templating

Meghan E. Lamm,* Kai Li, Ji Qian, Lu Wang, Nathalie Lavoine, Reagan Newman, Douglas J. Gardner, Teng Li, Liangbing Hu, Arthur J. Ragauskas, Halil Tekinalp, Vlastimil Kunc, and Soydan Ozcan*

Advanced Materials, Version of Record online:09 February 2021

<https://doi.org/10.1002/adma.202005538>

・セルロースナノファイバーをテンプレートに複合材料化あるいは後でファイバー除去して機能材料化

Innovative Synthetic Procedures for Luminogens Showing Aggregation-Induced Emission

Dingyuan Yan, Qian Wu, Dong Wang,* and Ben Zhong Tang*

Angew. Chem. Int. Ed., Version of Record online:09 February 2021

<https://doi.org/10.1002/anie.202006191>

・AIE 特性の発光化合物を AIEgens と命名、2001 年に始まった AIE の展開に終わりはなくどこまでも続く

Application of Dislocation Theory to Minimize Defects in Artificial Solids Built with Nanocrystal Building Blocks

Published as part of the Accounts of Chemical Research special issue "Transformative Inorganic Nanocrystals"

Justin C. Ondry and A. Paul Alivisatos*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00719>

・無機材料の結晶欠陥や不整合の修復メカニズムに関する総説、有機材料修復に応用するヒント満載？

Expanding the Boundary of Biorefinery: Organonitrogen Chemicals from Biomass

Xi Chen, Song Song, Haoyue Li, Gökalp Gö zaydın, and Ning Yan*

Accounts of Chemical Research, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.accounts.0c00847>

・バイオマスからバイオ燃料(や材料)を製造する工場・技術の最先端状況、ここでは含窒素化合物を対象

Polymer Synthesis

Solvent-Free Synthesis of the Polymer Electrolyte via PhotoControlled Radical Polymerization: Toward Ultrafast In-Built Fabrication of Solid-State Batteries under Visible Light

Peng Wen, Yucheng Zhao, Zongtao Wang, Jun Lin, Mao Chen,* and Xinrong Lin*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 11, 2021

<https://dx.doi.org/10.1021/acsami.0c21461>

・poly(mPEGAA)ベース薄膜固体ポリマー電解質を光重合(ラジカル重合)で1段階合成、相応の特性発現

A Systematic Study of Vinyl Ether-Based Poly(Ethylene Oxide) SideChain Polymer Electrolytes

Andreas J. Butzelaar, Kun L. Liu, Philipp Rö ring, Gunther Brunklaus, Martin Winter, and Patrick Theato*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 9, 2021

<https://dx.doi.org/10.1021/acsapm.0c01398>

- ・ PEO 側鎖ポリビニルエーテルベースのポリマー電解質の設計、グラフト鎖密度/側鎖の鎖長/塩濃度調整

Polymerization of Biobased Farnesene in Miniemulsions by Nitroxide-Mediated Polymerization

Sharmaine B. Luk and Milan Maric*

ACS Omega, Articles ASAP (Article), Publication Date (Web): February 11, 2021

<https://dx.doi.org/10.1021/acsomega.0c05992>

- ・ バイオベース原料のフェルネセン(ジエン構造含むセスキテルペン)を SG1 でミニエマルション制御重合

Photopolymerization of difunctional cyclopolymerizable monomers with low shrinkage behavior

Larissa Alena Ruppitsch, Gernot Peer, Katharina Ehrmann, Thomas Koch, Robert Liska

Journal of Polymer Science, Version of Record online:11 February 2021

<https://doi.org/10.1002/pol.20200863>

- ・ 昔からあるタイプの 5 員環形成型の多官能モノマーの環化光ラジカル重合で重合時の収縮率を低減化

Synthesis of Polyethylene Vitrimers in a Single Step: Consequences of Graft Structure, Reactive Extrusion Conditions, and Processing Aids

Mohamad Maaz, Alexi Riba-Bremerch, Clément Guibert, Nathan J. Van Zee,* and Renaud Nicolaÿ*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02649>

- ・ マレイミド基を含む化合物と過酸化存在下で PE の反応押し出し成形で側鎖に動的架橋構造を導入

Polymer Materials

Insect Antiadhesive Surfaces Using Electrospayed Wrinkled Ethyl Cellulose Particles

Johannes B. Bergmann, Alexandre Redondo, Ullrich Steiner,* Bodo D. Wilts,* and Dafni Moatsou*

ACS Applied Materials & Interfaces, Articles ASAP, Publication Date (Web): February 11, 2021

<https://dx.doi.org/10.1021/acsmi.0c21602>

- ・ 皺のあるエチルセルロース微粒子をエレクトロスプレー法で材料表面に並べて虫が嫌がる構造を設計

Effect of Aromatic/Aliphatic Structure and Cross-Linking Density on the Thermal Conductivity of Epoxy Resins

Guangxin Lv,§ Elynn Jensen,§ Naisong Shan, Christopher M. Evans, and David G. Cahill*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 8, 2021

<https://dx.doi.org/10.1021/acsapm.0c01395>

- ・ エポキシ樹脂とアミン硬化剤(アルキル/芳香環)と架橋密度の熱伝導性への影響を 14 種類の材料で評価

Enhancement of Mechanophore Activation in Mechanochromic Dendrimers by Functionalization of Their Surface

Takuma Watabe, Daisuke Aoki, and Hideyuki Otsuka*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 11, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02497>

- ・ ポリエーテル型 dendrimer 中心にラジカル解離基導入、末端官能基に依存してメカノケミカル向上

Design of Hydrogels with Thermo-responsive Crosslinked Domain Structures via the Polymerization-Induced Self-Assembly Process and Their Thermo-responsive Toughening in Air

Miki Morimura, Shohei Ida,* Masatoshi Oyama, Hiroki Takeshita, and Shokyoku Kanaoka*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 8, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02569>

- ・ RAFT 重合でテレケリック親水性ポリマーを合成、NIPAM 共重合中に PISA で温度応答性のドメイン形成

Strain-induced post-curing of acrylate networks

Eveline E. L. Maassen, Rosaria Anastasio, Serena Poto, Ruth Cardinaels, Rint P. Sijbesma, Lambert C. A. van Breemen, ohan P. A. Heuts

Journal of Polymer Science, Version of Record online:11 February 2021

<https://doi.org/10.1002/pol.20200768>

- ・ 2 官能アクリレート光硬化物の後熱架橋を考察、後反応による効果的な熱架橋は実用的観点から重要

Wetting, Adhesion, and Droplet Impact on Face Masks

Kiran Raj Melayil and Sushanta K. Mitra*

Langmuir, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.langmuir.0c03556>

- ・マスク表面の濡れ、吸着、液滴衝突挙動を解析、ただしマスク素材/繊維/形状依存性が重要なのでは？

Polymer Structure & Physics

Why Enhanced Subnanosecond Relaxations Are Important for Toughness in Polymer Glasses

Christopher L. Soles,* Adam B. Burns, Kanae Ito, Edwin P. Chan, Jack F. Douglas, Jinhuang Wu, Albert F. Yee, Yueh-Ting Shih, Liping Huang, Robert M. Dimeo, and Madhusudan Tyagi

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02574>

- ・サブナノ秒オーダー緩和がガラス状ポリマー(変成 PC)の靱性に対する作用を各温度領域で解析して議論

Scaling of Polymer Solutions as a Quantitative Tool

Andrey V. Dobrynin,* Michael Jacobs, and Ryan Sayko

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02810>

- ・希薄から濃厚までの広濃度範囲溶液粘度から水・有機溶媒・イオン液体中で様々な鎖の持続長を評価

Surface Tension Measurements of Aqueous Liquid–Air Interfaces Probed with Microscopic Indentation

Chathuri P. Kaluarachchi, Hansol D. Lee, Yiling Lan, Thiranjeeva I. Lansakara, and Alexei V. Tivanski*

Langmuir, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.langmuir.0c03507>

- ・AFM で気液界面ナノインデンテーション評価する際の問題点を抽出して議論、今後一般的手法に展開

Crystal Engineering & Liquid Crystal

Complex structures arising from the self-assembly of a simple organic salt

Riccardo Montis, Luca Fusaro, Andrea Falqui, Michael B. Hursthouse, Nikolay Tumanov, Simon J. Coles, Terry L.

Threlfall, Peter N. Horton, Rachid Sougrat, Anaïs Lafontaine, Gérard Coquerel & A. David Rae

Nature volume 590, pages 275–278(2021), Published online: 10 February 2021

<https://doi.org/10.1038/s41586-021-03194-y>

- ・単純な構造の有機塩の自己集合複雑な構造を形成する方法提案、クラスター形状と配位数で集合制御

Kinetically Controlled Formation of Semi-crystalline Conjugated Polymer Nanostructures

Peter Kei, Mitchell T. Howell, Carlos A. Chavez, Joseph C. Mai, Changwoo Do, Kunlun Hong, and Evgueni E. Nesterov*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 12, 2021

<https://dx.doi.org/10.1021/acs.macromol.0c02774>

- ・ピレンジカルボキシイミドから共役ポリマー鎖延長、スタッキング・凝集構造で吸収発光特性を制御

Bio-based & Biomedical Polymers

Doxorubicin Intracellular Release Via External UV Irradiation of Dextran-g-poly(o-nitrobenzyl acrylate)

Photosensitive Nanoparticles

Meriem El Founi, Hamed Laroui, Brandon S.B. Canup, Joseph S. Ametepe, Régis Vanderesse, Samir Acherar, Jérôme Babin, Khalid Ferji, Isabelle Chevalot, and Jean-Luc Six*

ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): February 10, 2021

<https://dx.doi.org/10.1021/acsabm.0c01644>

- ・デキストランと側鎖官能型アクリレートを用いて DOX 放出制御、o-ニトロベンジル基の光反応を利用

Dimension control on self-assembly of a crystalline core-forming polypeptoid block copolymer: 1D nanofibers versus 2D nanosheets

Yuhan Wei,* Fujun Liu, Min Li, Zhibo Li * and Jing Sun *

Polym. Chem., 2021, Advance Article, The article was first published on 10 Feb 2021

<https://doi.org/10.1039/D0PY01673J>

- ・PEG とポリペプチドのブロックポリマーの自己組織化と結晶化を利用してナノファイバー/ナノシートに

A quantitative metric for the comparative evaluation of optical clearing protocols for 3D multicellular spheroids

Akos Diosdi, Dominik Hirling, Maria Kovacs, Timea Toth, Maria Harmati, Krisztian Koos, Krisztina Buzas, Filippo

Piccinini, Peter Horvath

Computational and Structural Biotechnology Journal, in press, Available online 4 February 2021

<https://doi.org/10.1016/j.csbj.2021.01.040>

- ・ 生体組織(特に球状の細胞集合体)透明化実験の定量的評価方法の新規開発、専門的すぎて評価は難しい

On February 22, 2021

Reviews

Recent Trends in Advanced Polymer Materials in Agriculture Related Applications

Amrita Sikder,* Amanda K. Pearce, Sam J. Parkinson, Richard Napier,* and Rachel K. O'Reilly*

ACS Applied Polymer Materials, Articles ASAP (Review), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acsapm.0c00982>

- ・ 合成高分子も含めたポリマー全般の農業関連分野への応用、流行のバイオ由来ポリマーと異なる観点

Exchangeable Liquid Crystalline Elastomers and Their Applications

Mohand O. Saed, Alexandra Gablier, and Eugene M. Terentjev*

Chemical Reviews, Articles ASAP (Review), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acs.chemrev.0c01057>

- ・ 液晶エラストマー応力印加時の材料変形・メソゲン配向・各種物性の相関に注目、合成や応用も解説

Aliphatic Polycarbonates from Cyclic Carbonate Monomers and Their Application as Biomaterials

Wei Yu, Edward Maynard, Viviane Chiaradia, Maria C. Arno,* and Andrew P. Dove*

Chemical Reviews, Articles ASAP (Review), Publication Date (Web): February 16, 2021

<https://dx.doi.org/10.1021/acs.chemrev.0c00883>

- ・ 環状カーボネートの開環重合による脂肪族ポリカーボネートの合成と分解特性を網羅、DDS など応用も

Phenolic-enabled nanotechnology: versatile particle engineering for biomedicine

Di Wu, Jiajing Zhou, Matthew N. Creyer, Wonjun Yim, Zhong Chen, Phillip B. Messersmith and Jesse V. Jokerst

Chem. Soc. Rev., 2021, Advance Article, The article was first published on 17 Feb 2021

<https://doi.org/10.1039/DOCS00908C>

- ・ フェノール誘導体(DOPA 等含む)のバイオメディシン応用、前半で原料/合成/界面修飾/相互作用に言及

Polymer Synthesis

Automated PET-RAFT Polymerization toward Pharmaceutical Amorphous Solid Dispersion Development

Rahul Upadhyaya, Ashish Punia,* Mythili J. Kanagala, Lina Liu, Matthew Lamm, Timothy A. Rhodes, and Adam J. Gormley*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 15, 2021

<https://dx.doi.org/10.1021/acsapm.0c01376>

- ・ PET-RAFT 重合のポリマー自動合成、難溶性医薬品有効成分の経口バイオアベイラビリティ評価に活用

Amine-Catalyzed Chain Polymerization of Ethyl Glyoxylate from Alcohol and Thiol Initiators

David R. O. Hewitt and Robert B. Grubbs*

ACS Macro Lett. 2021, 10, 370–374, Publication Date (Web): February 16, 2021

<https://dx.doi.org/10.1021/acsmacrolett.0c00865>

- ・ 通常は重合制御が難しいアルデヒド(グリオキシル酸エチル)をアルコールやチオールで重合、末端制御

Bottlebrush Polymer Excipients Enhance Drug Solubility: Influence of End-Group Hydrophilicity and Thermoresponsiveness

Monica L. Ohnsorg, Paige C. Prendergast, Lindsay L. Robinson, Matthew R. Bockman, Frank S. Bates,* and Theresa M. Reineke*

ACS Macro Lett. 2021, 10, 375–381, Publication Date (Web): February 16, 2021

<https://dx.doi.org/10.1021/acsmacrolett.0c00890>

- ・ アクリルアミド共重合体側鎖をもつポリマーブラシを ROMP で合成、末端を制御して温度応答性制御

One-Pot Nonisocyanate Synthesis of Sequence-Controlled Poly(hydroxy urethane)s from a Bis(six-membered cyclic carbonate) and Two Different Diamines

Naoki Ousaka and Takeshi Endo*

Macromolecules, Articles ASAP (Article), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acs.macromol.1c00045>

- ・ スピロ型ジカーボネートを開環重合してポリマー鎖に残ったカーボネートを後から開環、構造を制御

Terpenoid-derived conjugated dienes with exo-methylene and a 6-membered ring: high cationic reactivity, regioselective living cationic polymerization, and random and block copolymerization with vinyl ethers

Takenori Nishida, Kotaro Satoh, Masazumi Tamura, Yingai Li, Keiichi Tomishige, Sylvain Caillol, Vincent Ladmiral, Marylène Vayer, Frédéric Mahut, Christophe Sinturel* and Masami Kamigaito*
Polym. Chem., 2021, Advance Article, The article was first published on 17 Feb 2021

<https://doi.org/10.1039/D1PY00035G>

- ・テルペンから誘導されるエキソメチレン型ジエンモノマーのカチオン重合反応性、リビング重合制御

Synthesis and performance of flexible epoxy resin with long alkyl side chains via click reaction

Xueyan Dai, Peihong Li, Yanlong Sui, Chunling Zhang

Journal of Polymer Science, Version of Record online: 18 February 2021

<https://doi.org/10.1002/pol.20210044>

- ・エポキシ樹脂に長鎖アルキル鎖をクリック反応で導入して柔軟性を向上、圧縮強度大、熱分解も解析

Metal-free atom transfer radical polymerization with ppm catalyst loading under sunlight

Qiang Ma, Jinshuai Song, Xun Zhang, Yu Jiang, Li Ji & Saihu Liao

Nature Communications **12**, 429 (2021), published on 18 January 2021

<https://www.nature.com/articles/s41467-020-20645-8.pdf> (open access)

Research highlight: “Dope new organocatalysts for ATRP” by Johannes Kreutzer, *Nature Reviews Chemistry*, volume 5, page 73 (2021), Published online 21 January 2021

<https://doi.org/10.1038/s41570-021-00252-x>

- ・メタルフリー-ATRP の開発と光重合制御に新たな展開、可視光で高効率に重合制御可能な有機触媒開発

Polymer Degradation

Closed-loop recycling of polyethylene-like materials

Manuel Häußler, Marcel Eck, Dario Rothauer & Stefan Mecking

Nature **590**, 423–427 (2021). on 18 February 2021

<https://doi.org/10.1038/s41586-020-03149-9>

News & views: “High-performance plastic made from renewable oils is chemically recyclable by design” by Charlotte K. Williams & Georgina L. Gregory, *Nature* **590**, 391-392 (2021)

<https://www.nature.com/articles/d41586-021-00349-9>

Editorial: Chemistry can help make plastics sustainable — but it isn’t the whole solution, *Nature* **590**, 363-364 (2021)

<https://doi.org/10.1038/d41586-021-00391-7>

Tuning thermo-mechanical properties of poly(lactic acid) films through blending with bioderived poly(alkylene furanoate)s with different alkyl chain length for sustainable packaging

Giulia Fredi, Daniele Rigotti, Dimitrios N. Bikiaris, Andrea Dorigato

Polymer, Volume 218, 18 March 2021, 123527

<https://doi.org/10.1016/j.polymer.2021.123527>

- ・フランジカルボン酸からのポリエステルとポリ乳酸のブレンド系、アルキル鎖長で熱機械特性を制御

Polymer Materials

Functional Hierarchical Pores in Polymer Monoliths: Macromolecular Synthesis and Selective Removal of Dyes

Doyeon Kim, Hea Ji Kim, Hyungwoo Kim,* and Ji Young Chang*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acsapm.0c01241>

- ・ピッカリングエマルジョンで合成した構造体を基にして階層的多孔構造を利用して軽量の構造体形成

Crosslinked PEDOT:PSS Organic Electrochemical Transistors on Interdigitated Electrodes with Improved Stability

Kan Tang, Wujian Miao, and Song Guo*

ACS Applied Polymer Materials, Articles ASAP (Article), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acsapm.0c01292>

- ・PEDOT/PSS を利用した有機トランジスタ材料の架橋による安定性向上、材料設計面での新規性は不明

Polymer Structure & Physics

Hexagonally Packed Cylindrical Structures with Multiple Satellites from Pentablock Quarterpolymers of the AB1CB2D Type and Their Blends with Homopolymers

Makoto Suzuki, Jiro Suzuki, Atsushi Takano, and Yushu Matsushita*

ACS Macro Lett. 2021, 10, 359–364, Publication Date (Web): February 15, 2021

<https://dx.doi.org/10.1021/acsmacrolett.1c00012>

- ・ ABCBD 型ペンタブロックポリマーが形成するヘキサゴナルパッキングのホモポリマー添加による変化

Tuning the vesicle-to-worm transition for thermoresponsive block copolymer vesicles prepared via polymerisation-induced self-assembly

Isabella R. Dorsman, Matthew J. Derry, Victoria J. Cunningham, Steven L. Brown, Clive N. Williams and Steven P. Armes *

Polym. Chem., 2021, Advance Article, The article was first published on 17 Feb 2021

<https://doi.org/10.1039/D0PY01713B>

- ・ RAFT と PISA を利用して合成した温度応答性ブロックポリマーベシクルの構造/形状変化を詳細に解析

Crystal Engineering & Liquid Crystal

Crystals and Crystallization in Drug Delivery Design

Lynne S. Taylor, Doris E. Braun, and Jonathan W. Steed*

Crystal Growth & Design, Articles ASAP (Editorial), Publication Date (Web): February 17, 2021

<https://dx.doi.org/10.1021/acs.cgd.0c01592>

- ・ 近日中に表題のバーチャル特集予定、共晶/溶解速度制御/多形/結晶化過程/体内動態などの話題が中心

Long-Range Order in Supramolecular π Assemblies in Discrete Multidecker Naphthalenediimides

Sudhir Kumar Keshri, Tomoya Ishizuka, Takahiko Kojima, Yoshitaka Matsushita, and Masayuki Takeuchi*

Journal of the American Chemical Society, Articles ASAP (Article), Publication Date (Web): February 18, 2021

<https://dx.doi.org/10.1021/jacs.0c13389>

- ・ ナフタレンジイミドを利用した共役オリゴマーの分子内スタッキング構造の形成、5 量体まで構造解析

Bio-based & Biomedical Polymers

Feasibility Study of Gelatin Preparation from the Bioinspired Collagen Aggregates by a “Two-step” Facile Degradation Method

Xuechuan Wang,* Mengdi Hou, Xinhua Liu,* Ouyang Yue, and Manhui Zheng

ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): February 18, 2021

<https://dx.doi.org/10.1021/acsabm.0c01215>

- ・ コラーゲン凝集体の 2 段階分解制御でアルカリ不使用型のゼラチンの新規作成方法を提案・物性評価

Tumor-Penetrating Peptide-Functionalized Ferritin Enhances Antitumor Activity of Paclitaxel

Yuanmeng Ma, Yixin Dong, Xun Li, Fei Wang, and Yu Zhang* Cite This:

ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): February 18, 2021

<https://dx.doi.org/10.1021/acsabm.0c01613>

- ・ ガン細胞ターゲットのパクリタキセル(タキソール)DDS、ヒト鉄結合性タンパク質にコード組み込み

Anticalcification Potential of POSS-PEG Hybrid Hydrogel as a Scaffold Material for the Development of Synthetic Heart Valve Leaflets

Renqi Guo, Ying Zhou, Siju Liu, Chuang Li, Cuifen Lu,* Guichun Yang, Junqi Nie, Feiyi Wang, Nian-Guo Dong, and Jiawei Shi*

ACS Applied Bio Materials, Articles ASAP (Article), Publication Date (Web): February 16, 2021

<https://dx.doi.org/10.1021/acsabm.0c01544>

- ・ ネットワーク構造制御した有機無機ハイブリッドハイドロゲルの人工心臓用の抗石灰化足場材料応用

General Chemistry & Others

High-resolution X-ray luminescence extension imaging

Xiangyu Ou, Xian Qin, Bolong Huang, Jie Zan, Qinxia Wu, Zhongzhu Hong, Lili Xie, Hongyu Bian, Zhigao Yi, Xiaofeng Chen, Yiming Wu, Xiaorong Song, Juan Li, Qiushui Chen, Huanghao Yang & Xiaogang Liu

Nature, volume 590, pages 410–415 (2021), on 18 February 2021

<https://doi.org/10.1038/s41586-021-03251-6>

News & views: “Glowing nanocrystals enable 3D X-ray imaging” by Albano N. Carneiro Neto & Oscar L. Malta,

Nature **590**, 396–397 (2021)

<https://doi.org/10.1038/d41586-021-00350-2>