

## Personal Details (個人情報)

|                         |                                                                                                                                                                                          |               |                                                      |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------|
| Name (氏名)               | Surname                                                                                                                                                                                  | First Name    | Last Updated (更新日)<br>October 8 <sup>th</sup> , 2025 |
|                         | : AJIRO (網代)                                                                                                                                                                             | Hiroharu (広治) |                                                      |
| Nationality (国籍)        | : Japan (日本国)                                                                                                                                                                            |               |                                                      |
| Gender (性別)             | : Male (男性)                                                                                                                                                                              |               |                                                      |
| Date of birth (生年月日)    | : June 9 <sup>th</sup> 1975                                                                                                                                                              |               |                                                      |
| Age (年齢)                | : 50                                                                                                                                                                                     |               |                                                      |
| Mailing address (住所)    | : Takayama-cho 8916-5, Ikoma, Nara 630-0192, Japan<br>(〒630-0192 奈良県生駒市高山町 8916-5)                                                                                                       |               |                                                      |
| Tel. (電話) / Email (メール) | : +81-(0)743-72-5508 / ajiro@ms.naist.jp                                                                                                                                                 |               |                                                      |
| Current position (現職)   | : Professor (教授),<br>Medilux Research Center, Nara Institute of Science and Technology (NAIST)<br>(奈良先端科学技術大学院大学 先端科学技術研究科 メディルクス研究センター)<br>Director of Research and Promotion (研究推進部門長) |               |                                                      |



## Concurrent (学内兼任) after 2019

- 2020.4~present : Data Science Center (データ駆動型サイエンス創造センター)
- 2022.4~2024.3. : NAIST-ARIM, Member (マテリアル先端リサーチインフラ事業 委員)
- 2023.4~2024.3. : Center for Materials Research Platform (マテリアル研究プラットフォームセンター)
- 2023.4~2025.3. : Office of Cooperation and Activation, Nara Medical University, member (奈良県立医科大学連携活性推進室 委員)
- 2024.7~present : Graduate School of Science and Technology, Division of Materials Science (先端科学技術研究科 物質創成科学領域)
- : Assistant to the President (International Affairs) (学長補佐 (国際))
- 2025.10~present : Director, International Collaboration Division, Organization for International and Human Resource Development Promotion (国際連携・人材開発推進機構国際連携部門長)

## Academic activity (学会活動)

- 2018.4.~present : The Society of Polymer Science, Japan: Research Group on Precisely Designed Network Polymer, acting committee (高分子学会, 精密ネットワークポリマー研究会, 運営委員)
- 2022.4.~2024.3. : The Society of Polymer Science, Japan: Research Group on Precisely Designed Network Polymer, Chairman (高分子学会, 精密ネットワークポリマー研究会, 運営委員長)
- 2022.6.~present : The Society of Polymer Science, Japan: Kansai Regional Chapter, Board members (高分子学会関西支部, 常任幹事)
- 2023.3.~present : The Chemical Society of Japan, Polymer division, Board members (日本化学会高分子ディビジョン, 幹事)
- 2023.5.~present : The Society of Polymer Science, Japan, delegate (高分子学会、代議員)
- 2023.7.~2025.3. : NEXT Kobunshi [Kansai] (NEXT 高分子[関西] 企画委員、主担当)
- 2024.7.~present : The Society of Polymer Science, Japan, International Exchange Committee, Member (高分子学会、国際交流委員会、委員)

## Other Certifications (その他の資格等)

- EIKEN Grade Pre-1 (英検準1級)
- Licensed Mental Care Counselor (メンタルケア心理士®)
- Utilized for international research collaboration, student supervision, and academic presentations. (国際共同研究・留学生指導・学会発表に活用)。
- Applied to support mental health of lab members and foster a collaborative research environment. (学生のメンタル支援・将来設計相談・研究課題遂行を促進するために活用)。

## Educational Background (学歴)

## 1. Postgraduate education (大学院博士課程)

Year (年月日) : March 25<sup>th</sup>, 2004 (平成 16 年 3 月 25 日)

University, Department (大学院、専攻) : Graduate School of Engineering, Nagoya University  
(名古屋大学大学院 工学研究科 応用化学専攻)

Research title (研究題目) : Synthesis and Stereochemistry of Novel Polystyrene Derivatives with Controlled Structure (構造制御された新規ポリスチレン誘導体の合成と立体化学)

Supervisor (指導教官) : Prof. Yoshio Okamoto (岡本佳男 教授)

Doctor's degree (学位) : Doctor of Engineering, Ph.D. 博士 (工学)

## 2. Postgraduate education (大学院修士課程)

Year (年月日) : March 26<sup>th</sup>, 2001 (平成 13 年 3 月 26 日)

University, Department (大学院、専攻) : Graduate School of Engineering, Nagoya University  
(名古屋大学大学院 工学研究科 応用化学専攻)

Research title (研究題目) : Stereo control of polystyrene derivatives bearing aminomethyl groups at ortho position by anionic polymerization (オルト置換アミノメチルスチレン誘導体のアニオン重合における立体構造制御)

Supervisor (指導教官) : Prof. Yoshio Okamoto (岡本佳男 教授)

Master's degree : Master of Engineering 修士(工学)

## 3. Undergraduate education (学部)

Year (年月日) : March 25<sup>th</sup>, 1999 (平成 11 年 3 月 25 日)

University, Department (大学、学部) : Nagoya University (名古屋大学 工学部 応用化学科)

Undergraduate degree (学位) : Bachelor of Engineering 学士 (工学)

Major courses (専攻) : Applied Chemistry (応用化学科)

## Work experience (職歴)

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|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 2024.7 ~ Date      | Nara Institute of Science and Technology, Graduate School of Science and Technology, Medilux Research Center [Concurrently: Graduate School of Science and Technology, Division of Materials Science]<br>(奈良先端科学技術大学院大学 先端科学技術研究科 メディルクス研究センター [兼 物質創成科学領域]) | Professor (教授),<br>Director of Research and Promotion (研究推進部門長) |
| 2019. 4 ~ 2024.7   | Nara Institute of Science and Technology, Graduate School of Science and Technology, Division of Materials Science<br>(奈良先端科学技術大学院大学 先端科学技術研究科 物質創成科学領域)                                                                                                     | Professor (教授)                                                  |
| 2015. 4. ~ 2019.3  | Nara Institute of Science and Technology, Institute for Research Initiatives [Concurrently: Graduate School of Science and Technology]<br>(奈良先端科学技術大学院大学 研究推進機構 [兼 先端科学技術研究科])                                                                               | Associate Professor (特任准教授)                                     |
| 2015. 1. ~ 2015.3  | Nara Institute of Science and Technology, Center for frontier science and technology [Concurrently: Graduate School of Materials Science]<br>(奈良先端科学技術大学院大学 先端科学技術研究推進センター [兼 物質創成科学研究科])                                                                    | Associate Professor (特任准教授)                                     |
| 2014.10. ~ 2018.3. | [兼: JST PRESTO (科学技術振興機構 戦略的創造研究推進事業)]                                                                                                                                                                                                                       | JST PRESTO Researcher (さきがけ研究者「分子技術と新機能創出」)                     |
| 2011.4. ~ 2014.12. | Osaka University, The Center for Advanced Engineering and Informatics [Concurrently: Graduate School of Engineering]<br>(大阪大学 臨床医工学融合研究教育センター [兼: 工学研究科])                                                                                                    | Specially Appointed Associate Professor (特任准教授)                 |
| 2006.4. ~ 2011. 3. | Osaka University, The Center for Advanced Engineering and Informatics [Concurrently: Graduate School of Engineering]<br>(大阪大学 臨床医工学融合研究教育センター [兼: 工学研究科])                                                                                                    | Specially Appointed Lecturer (特任講師)                             |
| 2005.4. ~ 2006. 3. | Cornell University, USA (アメリカ合衆国 コーネル大学)                                                                                                                                                                                                                     | Postdoctoral Associate [Cornell Univ.] (博士研究員 [コーネル大学])         |
| 2004.4. ~ 2005. 3. | Japan Society for the Promotion of Science (日本学術振興会)                                                                                                                                                                                                         | JSPS Research Fellow PD [Cornell Univ.] (特別研究員 PD [コーネル大学])     |
| 2003.4. ~ 2004. 3. | Japan Society for the Promotion of Science (日本学術振興会)                                                                                                                                                                                                         | JSPS Research Fellow DC2 [Nagoya Univ.] (特別研究員 DC2 [名古屋大学])     |

## Academic Society Members (所属学会など)

The Society of Polymer Science, Japan (SPSJ, 高分子学会), The Chemical Society of Japan (CSJ, 日本化学会), Japanese Society for Biomaterials (日本バイオマテリアル学会), The Kinki Chemical Society, Japan (近畿化学協会), The Society of Pure & Applied Coordination Chemistry (先端錯体工学研究会), Research Group on Precisely Designed Network Polymer, member of acting committee (精密ネットワークポリマー研究会). 14<sup>th</sup> Japanese-German Frontiers of Science Symposium (第14回日独先端科学シンポジウム). Research Group on Cycle Rank (サイクルランクの科学)

## Visiting Lecturer etc. (外部審査、客員教員、招へい教員、非常勤講師など)

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|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2025.12.~2026.3. | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2025.10.-2026.3. | Visiting Lecturer at Division of Applied Chemistry, Graduate School of Engineering, Osaka University, Japan<br>(大阪大学大学院工学研究科 客員教授: 非常勤講師「マテリアル化学特別講義 2/分子創成化学特別講義 3,4/物質機能化学特別講義 3,4」)                                    |
| 2025.4.~2027.3.  | Visiting Lecturer at Tokyo University of Science, Special Lecture for Master's Program, Department of Advanced Chemistry, Graduate School of Science and Technology (東京理科大学 非常勤講師「大学院 創域理工学研究科 先端化学専攻 修士課程 特別講義」)         |
| 2025.4.~2026.3.  | Visiting Professor at Global Center for Medical Engineering and Informatics, Osaka University, Japan<br>(大阪大学 国際医工情報センター 招へい教授)                                                                                           |
| 2025.4.~2025.9.  | Visiting Lecturer at Graduate School of Sciences and Technology for Innovation, Tokushima University, Japan<br>(徳島大学理工学部[大学院創成科学研究科] 物質合成化学特論)                                                                            |
| 2024.12.~2025.3. | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2024.12~2025.2.  | Visiting Lecturer at Institute of Science Tokyo, "Special lecture on Organic Macromolecules No.3" 2024<br>(東京科学大学 2024 年度「有機高分子特別講義第3」非常勤講師)                                                                              |
| 2022.4.1~現在      | Concurrent Lecturer at Faculty of Engineering, Nara Women's University, Japan<br>(奈良女子大学工学部工学科 兼任講師)                                                                                                                      |
| 2024.5.10.       | Visiting Lecturer at Graduate School of Engineering, Nagoya University, Japan<br>(名古屋大学 非常勤講師)                                                                                                                            |
| 2022.9.13~9.14.  | Visiting Lecturer at Graduate School of Engineering, College of Engineering, Osaka Metropolitan University, Japan<br>(大阪公立大学 非常勤講師)                                                                                       |
| 2023.12.~2024.3. | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2023.2.2~2.14    | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2022.2.21~3.23   | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2022.1.31.       | An external PhD thesis Chairperson for Mr. Junta Sano, at Department of Applied Chemistry, Graduate School of Engineering, Chubu University, Japan (中部大学大学院工学研究科応用科学専攻 佐野潤太 氏, 博士学位 外部審査員, 2022 年 1 月 31 日)               |
| 2020.12.8~12.18  | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師, online)                                                                                 |
| 2020.3.27~28.    | An external Master thesis Chairperson for Ms. Natjaya Ekapakul at Kasetsart University, Department of Materials Science, Faculty of Science, Thailand (タイ国カセサート大学 Ms. Natjaya Ekapakul, 修士学位 外部審査員, 2020 年 3 月 27 日-28 日) |
| 2019.11.18~11.21 | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師)                                                                                         |
| 2018.11.29~12.4  | Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand<br>(タイ国カセサート大学 Materials Engineering, 客員講師)                                                                                         |
| 2018.9.20~22.    | Visiting Lecturer at Faculty of Science, Kochi University<br>(高知大学 理学部理学・応用理学科および総合人間自然科学研究科 非常勤講師)                                                                                                                       |
| 2018.5.9.        | An external PhD thesis Chairperson for Ms. Visuta Engkagul at Chulalongkorn University, The petroleum and Petrochemical College, Thailand (タイ国チュラロンコン大学 Dr. Visuta Engkagul 博士学位 外部審査員, 2018 年 5 月 9 日)                   |

## Awards (受賞)

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|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2013, July  | Young Scientist Lecture Award; The Society of Polymer Science, Japan and Kansai Region Branch (2013)<br>(第59回高分子研究発表会[神戸] ヤングサイエンティスト講演賞 [高分子学会・高分子学会関西支部]) |
| 2010, May   | Award for Encouragement of Research in Polymer Science; The Society of Polymer Science, Japan (2010)<br>(平成21年度 高分子研究奨励賞 [高分子学会])                           |
| 2010, April | CSJ Presentation Award 2010<br>(日本化学会第90春季年会 優秀講演賞(学術) [日本化学会])                                                                                             |
| 2000, May   | Poster Award; The 48 <sup>th</sup> Annual Conference on Mass Spectrometry; The Mass Spectrometry Society of Japan<br>(第48回質量分析総合討論会 ポスター賞 [日本質量分析学会])       |

## Grant (研究助成: 研究代表者として)

|                 |                                                                                                                            |                                       |                                                                                       |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|
| 2025.12~2027.10 | KOSÉ COSMETOLOGY RESEARCH FOUNDATION                                                                                       | 公益財団法人 コーセーコスメトロジー研究財団                | LbL-3D Skin モデル:弾性制御とハイスループット評価技術の確立                                                  |
| 2025.4~2026.3   | Fujita PreA, Fujita Health University                                                                                      | 藤田研究開発課題(藤田 preA)                     | 分解しても中性を保つ機能性分解性高分子の高分子量化による力学特性制御と生体適合性評価                                            |
| 2025.1~2025.12  | Networked Exchange, United Strength for Stronger Partnerships between Japan and ASEAN                                      | JST 日 ASEAN 科学技術・イノベーション協働連携事業(NEXUS) | グリーンテクノロジーを支える新規材料創出                                                                  |
| 2024.10~2026.9  | IZUMI Science and Technology Foundation                                                                                    | 公益財団法人 泉科学技術振興財団                      | 新しい高伸縮性オルガノゲルの創成                                                                      |
| 2024.11~2028.3  | The AMADA Foundation                                                                                                       | 公益財団法人 天田財団                           | 分解性プラスチックとバイオマスの複合における塑性加工の開発                                                         |
| 2024.4~2028.3   | Grant in Aid for Scientific Research (B) (General)                                                                         | 科研 基盤研究(B)                            | 大きな双極子モーメントを持つ分解性高分子と多糖類による複合材料                                                       |
| 2024.4~2025.6   | The Descente and Ishimoto Memorial Foundation for the Promotion of Sports Science                                          | 公益財団法人 石本記念デサントスポーツ科学振興財団             | 衝撃吸収材を目指したキトサン誘導体による新規高分子材料創製                                                         |
| 2024.4~2025.3   | The Iwatani Naoji Foundation                                                                                               | 公益財団法人 岩谷直治記念財団                       | ガスハイドレート生成防止剤のために構造制御された N-ビニルアミド共重合体の創製                                              |
| 2024.4~2025.3   | The Eno Science Foundation                                                                                                 | 公益財団法人 江野科学振興財団                       | トリメチレンカーボネートによる分解性ゴムの多様化                                                              |
| 2024.4~2025.3   | Koyanagi Foundation                                                                                                        | 公益財団法人 小柳財団                           | 運動器疼痛に適したジバニリンによる新規分解性粒子の調製                                                           |
| 2023.12~2024.11 | Suzuken Memorial Foundation                                                                                                | 公益財団法人 鈴木謙三記念医科学応用研究財団                | 組成制御されたポリトリメチレンカーボネート誘導体薄膜による薬物徐放制御                                                   |
| 2023.11~2025.10 | Steel Foundation for Environmental Protection Technology                                                                   | 公益財団法人 鉄鋼環境基金                         | 工場排熱エネルギーを高効率で輸送する蓄熱材粒子の創製                                                            |
| 2023.10~2024.9  | Foundation of Institute for Chemical Fibers, Japan                                                                         | 公益財団法人 日本化学繊維研究所                      | バイオマス活用を目指した両末端ポリフェノール結合型ポリ乳酸共重合体の創製                                                  |
| 2024.3~2025.5   | Foundation for Promotion of Material Science and Technology of Japan (MST)                                                 | 一般財団法人 材料科学技術振興財団                     | N-ビニルアミドとイソプレンの共重合体を用いた天然ゴム粒子の表面修飾                                                    |
| 2023.6~2024.6   | The Murata Science Foundation                                                                                              | 公益財団法人 村田学術振興財団 第 39 回(2023 年度)研究助成   | 新しい圧電素子を目指した高い双極子を持つポリトリメチレンカーボネート誘導体の創製                                              |
| 2023.1~2025.3.  | Toshiaki Ogasawara Memorial Foundation, General Research Grant                                                             | 公益財団法人 小笠原敏晶記念財団 一般研究助成               | 可逆的化学結合を持つビトリマーにおける立体規則性の効果と高分子材料特性                                                   |
| 2022.4~2024.3.  | Grant in Aid for scientific Research on Innovative Areas (Research in a Proposed Research Area)(Publicly Offered Research) | 科研 新学術(公募)                            | N-ビニルアミドに特徴的な水和挙動解析と化学結合型表面修飾による新規ゲル材料創出                                              |
| 2022.4~2024.3.  | JSPS Bilateral Joint Research Projects (Vietnam-Japan)                                                                     | JSPS 二国間交流事業(共同研究) ベトナム - 日本          | 「セルロースと天然ゴムを使用する架橋構造を利用した新しい高分子材料創成」(研究代表者:網代広治、ベトナム国側代表者:Nguyen Ha Thu(ベトナム国ハノイ工科大)) |
| 2022.4~2023.3   | Collaborative research with Nara Medical University                                                                        | 令和4年度 公立大学法人奈良県立医科大学との共同研究助成          | 慢性運動器疼痛に対するカテーテル治療における新規高分子微粒子の開発                                                     |

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|--------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2022. 4 ~ 2024. 3  | The Mazda Foundation                                                                                                       | 公益財団法人<br>マツダ財団                                                                              | 柔らかい疎なグラフト鎖を有する合成高分子と多糖類とのブレンドによる高分子特性制御                                                                                                               |
| 2021.12 ~ 2022.11  | CASIO SCIENCE PROMOTION FOUNDATION                                                                                         | 公益財団法人<br>カシオ科学振興財団                                                                          | フォトクロミックエレクトロニクスを利用した新しいエステルフリー型分解性高分子材料の分解制御                                                                                                          |
| 2021.6 ~ 2024.3.   | NEDO Feasibility Study Program                                                                                             | 「NEDO 先導研究プログラム/新技術先導研究プログラム」のうち「マテリアル革新技術先導研究プログラム」、研究開発テーマ名:「データ駆動科学によるスマートスケラブルケミストリーの確立」 | 「データを活用した革新的マテリアル製造プロセスインフォマティクス技術の開発」<br><br>研究代表者: 藤井幹也(奈良先端大)、研究分担者: 網代広治(奈良先端大)、松原崇充(奈良先端大)、宮尾知幸(奈良先端大)、畑中美穂(慶応義塾大学)、大西裕也(JSR 株式会社)、菅原哲徳(JSR 株式会社) |
| 2021.6 ~ 2023.3.   | Next Generation Interdisciplinary Research Project                                                                         | 奈良先端科学技術大学院大学 次世代融合領域推進プロジェクト                                                                | 土壌に用いる機能性生分解性高分子による循環型材料の開発                                                                                                                            |
| 2020.4 ~ 2024.3    | Grant in Aid for Scientific Research (B) (General)                                                                         | 科研 基盤研究(B)                                                                                   | 汎用五大高分子の代替となるエステルフリー型生分解性高分子の設計と合成                                                                                                                     |
| 2020.4 ~ 2022.3    | Grant in Aid for scientific Research on Innovative Areas (Research in a Proposed Research Area)(Publicly Offered Research) | 科研 新学術(公募)                                                                                   | 過酷な環境に調和する <i>N</i> -ビニルアミドを用いた高強度保水材の開発                                                                                                               |
| 2020.4 ~ 2022.3    | TEPCO Memorial Foundation                                                                                                  | 公益財団法人<br>東電記念財団                                                                             | 交互積層薄膜とマンニトール微粒子による高効率蓄熱材料の創製                                                                                                                          |
| 2020.4 ~ 2022.3    | Research Foundation for the Electrotechnology of Chubu                                                                     | 公益財団法人<br>中部電気利用基礎研究振興財団                                                                     | <i>N</i> -ビニルアミド系高分子の最適化による革新的ガスハイドレード生成防止剤                                                                                                            |
| 2020.4 ~ 2022.3    | AMED                                                                                                                       | AMED 橋渡し研究戦略的推進プログラム 大阪大学 異分野融合型研究シーズ支援研究費                                                   | 分解しても中性を保つ新しい生体吸収性ステントを目指した生分解性高分子材料設計                                                                                                                 |
| 2019.11 ~ 2020.11  | JST A-STEP                                                                                                                 | JST A-STEP 機能検証フェーズ: 試験研究タイプ                                                                 | うがいによって薬物送達できる高分子材料の創製                                                                                                                                 |
| 2019.10 ~ 2023.3   | JSPS Fund for the Promotion of Joint International Research (Fostering Joint International Research (B))                   | JSPS 国際共同研究加速基金(国際共同研究強化 (B))                                                                | 動脈若返りのために複数薬剤徐放と分解をタイムプログラムした高分子材料創製(日本側研究代表者: 網代広治、フランス国側代表者 Prof. Blanca Martin-Vaca, Dr.                                                            |
| 2018.4 ~ 2022.3    | JSPS Bilateral Joint Research Projects (Thailand-Japan)                                                                    | JSPS 二国間交流事業(共同研究) タイ-日本                                                                     | 「皮膚の創傷治療を目指したキトサンと生体吸収性合成高分子の複合体(日本側研究代表者: 網代広治、タイ国側代表者: Dr. Chantiga Choochottiros, Kasetsart                                                         |
| 2018.4 ~ 2020.3    | The Asahi Glass Foundation                                                                                                 | 公益財団法人<br>旭硝子財団                                                                              | 生体材料応用を目指したセンチピード型ポリウレタンの創製                                                                                                                            |
| 2017.6 ~ 2020.3.   | Next Generation Interdisciplinary Research Project                                                                         | 奈良先端科学技術大学院大学 次世代融合領域推進プロジェクト                                                                | 免疫応答と生分解性高分子を融合させた機能性高分子の設計と合成                                                                                                                         |
| 2016.4. ~ 2018.3.  | Grant-in-Aid for Challenging Exploratory Research                                                                          | 科研 挑戦的萌芽研究                                                                                   | ペプチドの構造異性体に着目した非分解性の安全な抗菌性高分子材料の創製                                                                                                                     |
| 2016.4. ~ 2019.3.  | TEPCO Memorial Foundation                                                                                                  | 公益財団法人<br>東電記念財団                                                                             | 高効率ガスハイドレート防止剤のための高分子合成                                                                                                                                |
| 2014.10. ~ 2018.3. | JST PRESTO "Molecular Technology"                                                                                          | さががけ「分子技術と新機能創出」                                                                             | 複機能性高分子による循環器治療バイオマテリアルの創出                                                                                                                             |
| 2014.4. ~ 2016.3.  | Grant-in-Aid for Challenging Exploratory Research                                                                          | 科研 挑戦的萌芽研究                                                                                   | ステレオコンプレックスに関わるファンデルワールス力測定と界面接合による接着材料                                                                                                                |
| 2014.1. ~ 2015.3.  | The Ogasawara Foundation for the Promotion of Science & Engineering                                                        | 公益財団法人<br>小笠原科学技術振興財団                                                                        | キトサンとスルホン含有架橋剤による新規スキャホールドの創製                                                                                                                          |
| 2012.10. ~ 2013.9. | Sekisui-Kagaku Research-Aid Program on 'The Nature-Guided Materials Processing'                                            | 積水化学 自然に学ぶものづくり研究助成                                                                          | DNA複製メカニズムを模倣したメタクリル酸誘導体の立体特異性テンプレート重合とその反応機構                                                                                                          |
| 2012.4. ~ 2014.3.  | Grant-in-Aid for Young Scientists(B)                                                                                       | 科研 若手研究 (B)                                                                                  | 表面カチオン化ポリ( <i>N</i> -ビニルアミド)ゲルを利用した新規薬物徐放制御材料の創製                                                                                                       |
| 2012.4. ~ 2014.3.  | Arai Science and Technology Foundation                                                                                     | 公益財団法人<br>新井科学技術振興財団                                                                         | <i>N</i> -ビニルアミド誘導体を用いた石油パイプライン用安定剤の開発                                                                                                                 |
| 2011.3. ~ 2012.2.  | Shorai Foundation for Science and Technology                                                                               | 公益財団法人<br>松籙科学技術振興財団                                                                         | 残留農薬物を除去できる保水材の開発                                                                                                                                      |
| 2010.4. ~ 2011.3.  | Showahokokai                                                                                                               | 財団法人<br>昭和報公会                                                                                | 立体規則性を有する両親媒性ブロック共重合体を用いたナノ構造体の構築                                                                                                                      |

|                   |                                             |                         |                                          |
|-------------------|---------------------------------------------|-------------------------|------------------------------------------|
| 2010.5. ~2011.4.  | Tokuyama Science Foundation                 | 公益財団法人<br>徳山科学技術振興財団    | 高分子間相互作用を利用した立体規則性ポリスチレンによる新規ナノ反応場創製     |
| 2009.10. ~2010.9. | Kurita Water and Environment Foundation     | 公益財団法人<br>クリタ水・環境科学振興財団 | リサイクル可能な有機溶剤回収用機能性ゲルの創製                  |
| 2009.4. ~2010.3.  | The Kinki Regional Invention Center.        | 公益財団法人<br>近畿地方発明センター    | 立体規則性ポリビニルアミンの合成                         |
| 2009.4. ~2012.3.  | Grant-in-Aid for Young Scientists(B)        | 科研 若手研究 (B)             | 交互浸漬法を用いたポリイオンコンプレックス相形成によるインテリジェントゲルの創製 |
| 2007.4. ~2009.3.  | Grant-in-Aid for Young Scientists(start up) | 科研 若手研究 (スタートアップ)       | N-ビニルアルキルアミドを成分とする高強度ゲルと経皮吸収剤用基剤の開発      |

## Publication List

- (1) Aniruddha Nag, Araki Wakiuchi, Shogo Takasuka, Shigehito Asano, Ryo Hashizume, Miho Hatanaka, Tomoyuki Miyao, Yuya Ohnishi, Takamitsu Matsubara, Tsuyoshi Ando, Tetsunori Sugawara, Mikiya Fujii, Hiroharu Ajiro\*, "Investigation on regulated copolymer composition in free radical flow polymerization through tube length variation", *MRS Commun.* accepted on 19th August **2025**.
- (2) Hikaru Sasaki\*, Naoto Komeno, Takumi Hachimine, Kei Takahashi, Yu-ya Ohnishi, Tetsunori Sugawara, Araki Wakiuchi, Miho Hatanaka, Tomoyuki Miyao, Hiroharu Ajiro, Mikiya Fujii, Takamitsu Matsubara, "Robotic System for Chemical Experiment Automation with Dual Demonstration of Endeffector and Jig Operations", *Int. J. Intell. Robot. Appl.*, submitted on 31st July 2025. accepted on 17th August **2025**.
- (3) Maho Oura, Amane Kamei, Chantiga Choochottiros, Nalinthip Chanthaset, Hiroharu Ajiro\*, "Water flux evaluation by using semipermeable membrane and various poly(N-isopropyl acrylamide) hydrogels with semi- interpenetrating polymer network", *J. Appl. Polym. Sci.* accepted on 13th August **2025**.
- (4) Nam Truong Hoai, Trang Ho Le Hanh, Hang Nguyen Thi Thu, Ngoc Nguyen Vo Hong, An Ngo Ngoc Bao, Minh Vu Tue, Trong Tran Huy, Thanh Do Kim, Huyen Doan Thi Hoa, Luyen Tran Thi, Hiroaki Yoshida, Hiroharu Ajiro, Thuy Tran Thi\*, "Investigation of the effects of poly(ethylene glycol) on the properties of a novel poly(vinyl alcohol) membrane modified with L-glutamic acid for copper removal", *Polym. J.* Accepted on 25th July **2025**.
- (5) Hiroaki Yoshida\*, Takanori Maeno, Ryo Kawatani, Yumi Miyaji, Hiroharu Ajiro \*, "Ultra-stretchable Transparent Hydrogels with Low Hydrophobic and Amphiphilic Monomers Using Asymmetric Crosslinker to Give Low Mechanical Hysteresis", *Chem. Eur. J.* accepted on 23rd July **2025**.
- (6) Hiromu Yamada, Shogo Takasuka, Shunto Oikawa, Yosuke Harashima, Tomoaki Takayama, Aniruddha Nag, Araki Wakiuchi, Tsuyoshi Ando, Tetsunori Sugawara, Miho Hatanaka, Tomoyuki Miyao, Takamitsu Matsubara, Yu-ya Ohnishi, Hiroharu Ajiro, Mikiya Fujii\*, "Multi-objective Bayesian optimization for experimental design in copolymerization and revealing chemical mechanism of Pareto fronts", *ACS Appl. Eng. Mater.* accepted on 18th July **2025**.
- (7) Ayaka D. Inoue, Tsuyoshi Ando, Shuta Fukuura, Takashi Yumura, Hiroharu Ajiro, Tsuyoshi Kawai, Yoshiyuki Nonoguchi, "Dispersion of carbon nanotubes triggered by helical self-assembly of poly(methyl methacrylate)", *Nanoscale*, accepted on 25th June **2025**.
- (8) Sakiko Yashiro, Hiroaki Yoshida\*, Tran Thi Thuy, Nguyen Thu Ha, Nguyen Ngoc Mai, Seiichi Kawahara, Ryohei Ikura, Hiroharu Ajiro \*, "N-Vinylamides as Structural Isomers of Protein Grafted onto Deproteinized Natural Rubber and Their Mechanical Strengths", *Macromol. Rapid Commun.* accepted on 20th June **2025**.
- (9) Kamolchanok Sarisuta, Blanca Martin-Vaca\* Didier Bourissou,\* Julien Monot, Nalinthip Chanthaset,\* Hiroharu Ajiro \*, "Thiol-ene derivatization of polycarbonates deriving from 5-methylene-1,3-dioxane-2-one: an efficient and practical way to tune the surface biocompatibility of polycarbonate films", *Polym. J.* <Special issue> Accepted on 27th May **2025**.
- (10) Kengo Hayase, Tsuyoshi Ando\*, Daisuke Hasegawa, Hiroharu Ajiro\*, "Phase change materials particles by Y-shaped polymer composed of polylactide stereocomplex and poly(stearyl methacrylate)", *Colloid Surf. A.*, accepted on 23rd April 2025.
- (11) Mukmin Sapto Pamungkas, Tsuyoshi Ando\*, Hiroharu Ajiro\*, "Copolymer synthesis of N-vinylacetamide and 2-methylene-1,3-dioxepane provides a new degradable polymer", *J. Polym. Sci.* accepted on 17th Dec. 2024. [OPEN ACCESS].
- (12) Anh Nguyen Thi Ngoc, Nam Vu Trung, Minh Vu Tue, Trong Tran Huy, Quynh Nguyen Thi, Hau Than Van, Shu Morishita, Thu Ha Nguyen, Hiroharu Ajiro, Thuy Tran Thi\*, "Characterization of deproteinized natural rubber modified via graft copolymerization with styrene/acrylonitrile and reinforced with cellulose nanofibers", *Polym. J.* accepted on 3rd Dec. **2024**.
- (13) Anchan Khankhuan, Yuka Morimura, Hiroharu Ajiro\*, "Improving the Mechanical Properties of Chitosan through Blending with Poly(trimethylene carbonate) copolymer", *Int. J. Biol. Macromol.* Accepted on 17th Nov. **2024**.
- (14) Shogo Takasuka, Sho Ito, Shunto Oikawa, Yosuke Harashima, Tomoaki Takayama, Aniruddha Nag, Araki Wakiuchi, Tsuyoshi Ando, Tetsunori Sugawara, Miho Hatanaka, Tomoyuki Miyao, Takamitsu Matsubara, Yu-ya Ohnishi, Hiroharu Ajiro, Mikiya Fujii\*, "Bayesian optimization of radical polymerization reactions in a flow synthesis system", *Sci. Technol.*

- Adv. Mater.: Method*, accepted on 30th Oct. **2024**. [EDITOR'S CHOICE]
- (15) Ayun Erwina Arifianti, Takamasa Matsumoto, Nalinthip Chanthaset,\* **Hiroharu Ajiro**\*, "Synthesis and Characterization of Ester-Free Type Poly(trimethylene carbonate) Bearing Long-Alkyl Moieties and Its Degradation", *Polym. J.* accepted on October 14th **2024**.
  - (16) Shuga Katayama, Maho Oura, Clement Matthew Chan, Peter Halley, Shosuke Yoshida, Nalinthip Chanthaset, **Hiroharu Ajiro**\*, "Antioxidation and rheological modification of polylactide by gallic acid at chain end and stereocomplex formation", *Chem. Lett.* accepted on 29th September **2024**.
  - (17) Ayun Erwina Arifianti, **Hiroharu Ajiro**\*, "Investigation of the Interaction Between Poly(trimethylene carbonate) and Various Hydroxyl Groups", *Macromol.* **2024**, *4*, 697-707. [OPEN ACCESS]
  - (18) Rui Zhang, Nalinthip Chanthaset,\* Takeshi Sato, Shinichi Iwakoshi, Katsutoshi Horiuchi, Toshihiro Tanaka,\* **Hiroharu Ajiro**\*, "Particle behaviors of Imipenem/Cilastatin in various liquids investigated by chemical structures and temporal microscope observations", *Colloid Surf. A* **2024**, *701*, 134896.
  - (19) Desy Liana, **Hiroharu Ajiro**, Nalinthip Chanthaset\*, Anuchit Phanumartwath\*, "A Smart Dual pH- and Thermo-Responsive PNIPAM-BIS Hydrogel Incorporated with PLLA Microparticles for Enhanced Topical Delivery of Betamethasone Dipropionate Supplemented with Boesenbergia rotunda for Atopic Dermatitis Treatment", *ACS Appl. Polym. Mater.* **2024**, *6*, 9294-9305
  - (20) Naoto Hirano, Hiroaki Yoshida\*, Tsuyoshi Ando, **Hiroharu Ajiro**\*, "La[N(SiMe<sub>3</sub>)<sub>2</sub>]<sub>3</sub>: A Highly Active Catalyst for the Ring-Opening Polymerization of Trimethylene Carbonate", *J. Polym. Sci.* **2024**, *62*, 4262-4269.
  - (21) Malcolm A. Kelland, Mathias Destarac, Olivier Coutelier, Alexis Dupre-Demorsy, Tsuyoshi Ando, **Hiroharu Ajiro**, Erik G. Dirdal, Janronel Pomicpic, "Kinetic hydrate inhibitors – which is best, block or statistical copolymers?", *Energ. Fuel*, **2024**, *38*, 11607-11615.
  - (22) Hiroaki Yoshida\*, Kiyonori Nagaoka, **Hiroharu Ajiro**\*, "Agarose nanofiber by electrospinning", *Macromol. Chem. Phys.* **2024**, *225*, 2400155.
  - (23) Masayasu Totani, **Hiroharu Ajiro**, Jun-ichi Kadokawa, Masao Tanihara, Tsuyoshi Ando\*, "Surface zeta potential and protein adsorption properties on the coating surface of heteroarm star polymer with controlled hydrophilic/hydrophobic arm ratio", *Polym. J.* **2024**, *56*, 783-789.
  - (24) Araki Wakiuchi, Swarit Jasial, Shigehito Asano, Ryo Hashizume, Miho Hatanaka, Yu-ya Ohnishi, Takamitsu Matsubara, **Hiroharu Ajiro**, Tetsunori Sugawara, Mikiya Fujii, Tomoyuki Miyao\*, "Multiple Comonomer Concentrations Prediction from FTIR Spectra with Quantum Chemistry-based Interpretation", *MRS Commun.* **2024**, *14*, 439-444.
  - (25) Nalinthip Chanthaset\*, Nichagarn Greetatorn, Oratai Jongprateep, **Hiroharu Ajiro**\*, Kanapol Jutamanee\*, "Sustainable Coating Materials: Exploring the Influence of Adjuvants on Kaolinite Suspension with Insights from Five Local Mining Clays", *ACS Omega* **2024**, *9*(18), 20231-20242.
  - (26) Hiroaki Yoshida\*, Tsurugi Kikukawa, Go Matsuba, **Hiroharu Ajiro**\*, "Chemically bound hydrophobic modification on hydrogel surface with poly(*N*-vinylamide)s", *Polymer* **2024**, *294*, 126695(7).
  - (27) Daisuke Aoki, Hiroaki Yoshida, **Hiroharu Ajiro**\*, "Comb polyurethanes Consisting of Hard Segment Backbone and Dangling Soft Segments for Tailoring Mechanical Properties of Thermoplastics", *Macromolecules*, **2024**, *57*(2), 640-651.
  - (28) Jaeyeong Choi, **Hiroharu Ajiro**\*, "Proposal of pseudo-capping effects by polymer-polymer interaction through preparation of stereocomplex pseudo-polyrotaxane with cyclodextrin and PEG-PLA triblock copolymers", *Macromol. Chem. Phys.* **2024**, *225*, 2300370(7).
  - (29) Rikyu Miyake, **Hiroharu Ajiro**\*, "Investigation of the Mechanical Properties and Degradation of Ester-free Poly(trimethylene carbonate) Derivatives Bearing Various Bulky Aromatic Groups", *Polym. J.* <Special Issue>, **2024**, *56*, 319-333.
  - (30) Malcolm A. Kelland,\* Erik G. Dirdal, Janronel Pomicpic, **Hiroharu Ajiro**, Aniruddha Nag, "Kinetic hydrate inhibitors – the effect of pre- or post-polymerization solvent addition on performance, and a powerful new glycol ether solvent synergist", *Energ. Fuel*, **2023**, *37*, 11853-11863.
  - (31) Malcolm A. Kelland,\* Erik G. Dirdal, Radhakanta Ghosh, **Hiroharu Ajiro**, "Improved gas hydrate kinetic inhibition for 5-methyl-3-vinyl-2-oxazolidinone copolymers and synergists", *ACS Omega*, **2023**, *8*, 28859-28865.
  - (32) Shohei Shimizu, Hiroaki Yoshida, Koichi Mayumi, **Hiroharu Ajiro**, Yoshimitsu Sagara\*, "Mechanochromic luminescence of phase-separated hydrogels that contain cyclophane mechanophores", *Mater. Chem. Front.* **2023**, *7*, 4073-4079.
  - (33) Shogo Takasuka, Shunto Oikawa, Takayoshi Yoshimura, Sho Ito, Yosuke Harashima, Tomoaki Takayama, Shigehito Asano, Akira Kurosawa, Tetsunori Sugawara, Miho Hatanaka, Tomoyuki Miyao, Takamitsu Matsubara, Yu-ya Ohnishi, **Hiroharu Ajiro**, Mikiya Fujii\*, "Extrapolation performance improvement by quantum chemical calculations for machine-learning-based predictions of flow-synthesized binary copolymers", *Digital Discovery*, **2023**, *2*, 809-818.
  - (34) Araki Wakiuchi, Swarit Jasial, Shigehito Asano, Ryo Hashizume, Miho Hatanaka, Yu-ya Ohnishi, Takamitsu Matsubara, **Hiroharu Ajiro**\*, Tetsunori Sugawara, Mikiya Fujii, Tomoyuki Miyao,\* "Chemometrics Approach based on Wavelet Transform for the Estimation of Monomer Concentrations from FTIR Spectra", *ACS Omega*, **2023**, *8*, 19781-19788.
  - (35) Araki Wakiuchi, Shogo Takasuka, Shigehito Asano, Ryo Hashizume, Aniruddha Nag, Miho Hatanaka, Tomoyuki Miyao, Yuya Ohnishi, Takamitsu Matsubara, Tsuyoshi Ando, Tetsunori Sugawara, Mikiya Fujii, **Hiroharu Ajiro**\*, "Composition Regulation by Flow Copolymerization of Methyl Methacrylate and Glycidyl Methacrylate with Free Radical Method", *Macromol. Mater. Eng.* **2023**, *308*, 2200626(6).
  - (36) Takami Akagi, Tomomi Yamada, Hiromi Miyazaki, Hiroyuki Taguchi, Hidefumi Ikeda, Masakazu Katoh, Simona Mura, Patrick Couvreur, Paninee Chetprayoon, Raviwan Maniratanachote, Hiroaki Yoshida, **Hiroharu Ajiro**, Koji Hashimoto, Takao Ashikaga, Hajime Kojima, Mitsuru Akashi\*, "Validation study for in vitro skin irritation test using reconstructed human skin equivalents constructed by layer-by-layer cell coating technology", *J. Appl. Toxicol.* **2023**, *43*, 874-886.
  - (37) Nalinthip Chanthaset\*, Akari Maehara, **Hiroharu Ajiro**\*, "Particles and film preparation of ester-free type poly(trimethylene carbonate) derivatives bearing aromatic groups initiated with hydrophilic initiators", *Colloids Surf. A*, **2023**, *667*, 131413(8).
  - (38) Lee Yae Tan, Nalinthip Chanthaset\*, Arif Fadlan, **Hiroharu Ajiro**\*, "Synthesis of Ester-free Poly(trimethylene carbonate)

- Bearing Cinnamyl Moiety for Antibacterial Biomaterials Applications", *React. Funct. Polym.* **2023**, *186*, 105563(8).
- (39) Nobuo Murase\*, Hideharu Kurioka, Chisato Komura, **Hiroharu Ajiro**, Tsuyoshi Ando\*, "Synthesis of a novel carboxybetaine copolymer with different spacer lengths and inhibition of nonspecific protein adsorption on its polymer film", *Soft Matter* **2023**, *19*, 2330-2338.
- (40) Kamolchanok Sarisuta, Mizuho Iwami, Blanca Martin-Vaca, Nalinthip Chanthaset\*, **Hiroharu Ajiro**\*, "The pH Effect on Particle Aggregation of Vanillin End-capped Polylactides Bearing Hydrophilic Group Connected by Cyclic Acetal Moiety", *Langmuir* **2023**, *39*, 3994-4004.
- (41) Tsuyoshi Ando\*, Kazuki Yamaguchi, **Hiroharu Ajiro**\*, "Thermoresponsive star-shaped polymer with heteroarm type with methacrylates prepared by living radical polymerization method", *Polym. Chem.* **2023**, *14*, 1027-1035.
- (42) Miguel Palenzuela, Kamolchanok Sarisuta, Marta Navarro, Narumi Kumamoto, Nalinthip Chanthaset, Julien Monot, **Hiroharu Ajiro**, Blanca MARTIN-VACA\*, Didier Bourissou\*, "5-Methylene-1,3-Dioxane-2-One: A First Choice Comonomer for Trimethylene Carbonate", *Macromolecules* **2023**, *56*, 678-689.
- (43) Ryo Kawatani, Taiga Hamawaki, Tomonori Waku, Naoki Tanaka, **Hiroharu Ajiro**\*, "Evaluation of Biocompatible Films using Copolymers of N-Vinylbenzamide with Cationic Moieties by Hydrolysis of N-Vinylformamide", *Macromol. Chem. Phys.* **2023**, *224*, 2200386.
- (44) Izabela Kurowska, Alexis Dupre--Demorsy, Stéphane Balayssac, Marie Henne-tier, Audrey Ric, Valérie Bourdon, Tsuyoshi Ando, **Hiroharu Ajiro**, Olivier Coutelier, Mathias Destarac\*, "Tailor-made poly(vinylamine) via purple LED-activated RAFT polymerization of N-vinylformamide", *Macromol. Rapid Commun.* **2023**, *44*, 2200729 (6), OPEN ACCESS.
- (45) Jaeyeong Choi, **Hiroharu Ajiro**\*, "Preparation of stereocomplex and pseudo-polyrotaxane with various cyclodextrins as wheel components using triblock copolymer of poly(ethylene glycol) and polylactide", *Soft Matter*, **2022**, *18*, 8885-8893.
- (46) Alexis Dupre--Demorsy, Izabela Kurowska, Stéphane Balayssac, Marie Henne-tier, Audrey Ric, Valérie Bourdon, Tsuyoshi Ando, **Hiroharu Ajiro**, Olivier Couteliera, Mathias Destarac\*, "RAFT polymerisation of N-vinylformamide and corresponding double hydrophilic block copolymers", *Polym. Chem.* **2022**, *13*, 6229-6237.
- (47) Malcolm A. Kelland\*, Radhakanta Ghosh, Audun Undheim, Erik G. Dirdal, **Hiroharu Ajiro**, "Oxyvinylene lactam polymers - a new class of lactam-based kinetic hydrate inhibitor polymers", *ACS Omega*, **2022**, *7*, 35686-35693.
- (48) Natjaya Ekapakul, Chomdao Sinthuvanich, Hiroharu Ajiro, Chantiga Choochottiros\*, "Bioactivity of Star-shaped Polycaprolactone/Chitosan Composite Hydrogels for Novel Biomaterials", *Int. J. Biol. Macromol.* **2022**, *212*, 420-431.
- (49) Lee Yae Tan, Nalinthip Chanthaset\*, **Hiroharu Ajiro**\*, "Surface Coating and Characteristics of Ester-free Poly(trimethylene carbonate) Bearing an Aromatic Urea Moiety for Biomaterials Use", *Mater. Adv.* **2022**, *3*, 5778-5785.
- (50) Daisuke Aoki, Francisco Lossada, Daniel Hoenders, **Hiroharu Ajiro**\*, Andreas Walther\*, "Efficient softening and toughening strategies of cellulose nanofibril nanocomposites using comb polyurethane", *Biomacromolecules* **2022**, *23*, 1693-1702.
- (51) Rikyu Miyake, Akari Maehara, Nalinthip Chanthaset, **Hiroharu Ajiro**\*, "Thermal property control by copolymerization of trimethylene carbonate and its derivative bearing triphenylmethyl group", *ChemistrySelect*, **2022**, *7*, e202104326.
- (52) Malcolm Kelland\*, Erik Dirdal, Radhakanta Ghosh, **Hiroharu Ajiro**, "5-Methyl-3-vinyl-2-oxazolidinone (VMOX) - investigations of a new monomer for kinetic hydrate inhibitor polymers", *Energ. Fuel*, **2022**, *36*, 2609-2615.
- (53) Alexis Dupre--Demorsy, Olivier Coutelier, Mathias Destarac\*, Clémence Nadal, Valérie Bourdon, Tsuyoshi Ando, **Hiroharu Ajiro**, "RAFT Polymerization of N-Methyl-N-Vinylacetamide and Related Double Hydrophilic Block copolymers", *Macromolecules*, **2022**, *55*, 1127-1138.
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