

Personal Details (個人情報)

Name (氏名)	Surname : AJIRO (網代)	First Name Hiroharu (広治)	Last Updated (更新日) Feb. 3rd, 2022
Nationality (国籍)	: Japan (日本国)		
Gender (性別)	: Male (男性)		
Date of birth (生年月日)	: June 9 th 1975		
Age (年齢)	: 46		
Current position (現職)	: Professor (教授)		
	Graduate School of Science and Technology, Division of Materials Science, Nara Institute of Science and Technology (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)		
Concurrent (兼務)	: Data Science Center, Nara Institute of Science and Technology (奈良先端科学技術大学院大学データ駆動型サイ エンス創造センター)		
Mailing address (住所)	: Takayama-cho 8916-5, Ikoma, Nara 630-0192, Japan (〒630-0192 奈良県生駒市高山町 8916-5)		
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Educational Background (学歴)

1. Postgraduate education (大学院博士課程)

Year (年月日)	: March 25 th , 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 応用科学専攻)
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 th , 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 応用科学専攻)
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 th , 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 応用化学および物質化学研究科)
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)

2019. 4 ~ Date	Nara Institute of Science and Technology, Graduate School of Science and Technology, Division of Materials Science (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. 1. ~ 2019.3	Nara Institute of Science and Technology, Institute for Research Initiatives [Concurrently: Graduate School of Materials Science] (奈良先端科学技術大学院大学 研究推進機構 [兼 物質創成科学研究科])	Associate Professor (特任准教授)
2014.10. ~ 2018.3.	JST PRESTO (科学技術振興機構 戦略的創造研究推進事業)	JST PRESTO Researcher (さがしけ研究者「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] (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] (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, 運営委員) <2018.4.~2022.3.>. 14th Japanese-German Frontiers of Science Symposium (第 14 回 日独先端科学シンポジウム)

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

2022.4.1~	Concurrent Lecturer at Faculty of Engineering, Nara Women's University, Japan (奈良女子大学工学部工学科 兼任講師)
2022.7.	Visiting Lecturer at Graduate School of Engineering, College of Engineering, Osaka Prefecture University, Japan (大阪府立大学 非常勤講師)
2022.1.●~	Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand (タイ国カセサート大学 Materials Engineering, 客員講師, online)
2022.2.2.	●●●●● (中部大学 佐野潤太氏, 博士学位 外部審査員, 2022 年 2 月 2 日)
2020.12.8~12.18	Visiting Lecturer at Faculty of Materials Engineering, Kasetsart University, Thailand (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 (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 (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 (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)

2013, July	Young Scientist Lecture Award; The Society of Polymer Science, Japan and Kansai Region Branch (2013) (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) (平成 21 年度 高分子研究奨励賞 [高分子学会])
2010, April	CSJ Presentation Award 2010 (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 th Annual Conference on Mass Spectrometry; The Mass Spectrometry Society of Japan (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)

2021.12 ~ 2022.11	CASIO SCIENCE PROMOTION FOUNDATION	公益財団法人 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
2022. 4 ~ 2024. 3	The Mazda Foundation	公益財団法人 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
2021.6 ~ 2022.3.	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」 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	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 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 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 TENT 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
2019.10~2022.3	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. Didier Bourissou (トゥールーズ大学))
2018.4~2021.3	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 University)
2018.4 ~ 2020.3	The Asahi Glass Foundation	公益財団法人 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 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"	さきがけ「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 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 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 松籙科学技術振興財団	残留農薬を除去できる保水材の開発
2010.4. ~2011.3.	Showahokokai	財団法人 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 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 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 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)	<i>N</i> -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製剤用基剤の開発

Publication List

- (1) 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*, accepted on 1st February 2022.
- (2) Hiroaki Yoshida*, Hiroya Furumai, **Hiroharu Ajiro***, "Preparation and Characterization of Thermoresponsive Poly(*N*-vinylisobutylamide) Microgels", *Langmuir*, Accepted on 10th January 2022.
- (3) Shin Asano, Jaeyeong Choi, Tran Thi Tran, Nalinthip Chanthaset, **Hiroharu Ajiro***, "The influence of chain-end functionalization and stereocomplexation on the degradation stability under alkaline condition", *Polym. Adv. Technol.* accepted on 24th Nov. 2021.
- (4) Jaeyeong Choi*, **Hiroharu Ajiro***, "Preparation and analyses of stereocomplexes of a polylactide homopolymer and copolymer with poly(ethylene glycol) and urethane capping" *Polym. J.* accepted on 25th August 2021.
- (5) Jaeyeong Choi, Malcolm A. Kelland, Hiroya Furumai, Yumi Miyaji, Yukako Nakai, Masayuki Fukushima, **Hiroharu Ajiro***, "Preparation of poly(*N*-vinyl caprolactam) with various end groups using chain transfer agents and evaluation of their effects on kinetic hydrate inhibition", *Polym. Bull.* Accepted on 1st March 2021.
- (6) Ikuo Yamamoto*, Shinichi Minami, Tsuyoshi Ando, **Hiroharu Ajiro***, "Radical Copolymerization on Fluoroalkyl α -Chloroacrylate Monomers for Copolymer Composition Control", *Polym. Bull.* accepted on 16th January 2021.
- (7) Oratai Jongprateep*, Chitlada Mani-lata, Yosita Sakunrak, Krittanant Audcharuk, Tithametha Narapong, Siraprapa Pitiphattharabun, Amornrat Lertworasirikul, Apirat Laobuthee, Naris Thengchaisri, **Hiroharu Ajiro**, Hiroaki Yoshida, Gasidit Panomsuwan*, "Titanium Dioxide and Fluoropolymer-based Coating for Smart Gowns with Antimicrobial and Fluid Repellent Properties", *RSC Adv.* 2022, 12, 588-594.
- (8) Daisuke Aoki, Akihiro Miyake, Wanpen Tachaboonyakiat* **Hiroharu Ajiro***, "Remarkable Diastereomeric Effect on Thermoresponsive behavior of Polyurethane based on Lysine and Tartrate Ester Derivatives", *RSC Adv.* 2021, 11(56), 35607-35613.
- (9) Ryoga Fujiwara, Rikako Sanuki, **Hiroharu Ajiro**, Toshiaki Fukui, Shosuke Yoshida*, "Direct fermentative conversion of poly(ethylene terephthalate) into poly(hydroxyalkanoate) by *Ideonella sakaiensis*", *Sci. Rep.* 2021, 11, 19991.
- (10) Hiroaki Nobuoka, Rikyu Miyake, Jaeyeong Choi, Hiroaki Yoshida, Nalinthip Chanthaset, **Hiroharu Ajiro***, "Synthesis of ester free type poly(trimethylene carbonate) derivatives bearing cycloalkyl side groups" *Eur. Polym. J.* 2021, 160, 110782.
- (11) Lee Yae Tan, Nalinthip Chanthaset*, Shinsuke Nanto, Ryoichi Soba, Masakazu Nagasawa, Hiroshi Ohno, **Hiroharu Ajiro***, "Synthesis and Preparation of Cross-linked Films with Ester-Free Poly(trimethylene carbonate) Bearing Aromatic Urea Moiety", *Macromolecules* 2021, 54(12) 5518–5525.
- (12) Jaeyeong Choi, Toshikazu Takata, **Hiroharu Ajiro***, "Pseudo-polyrotaxane stereocomplex with α -cyclodextrin and block copolymers using poly(ethylene glycol) and polylactide", *Macromolecules* 2021, 54(11) 5087–5093.
- (13) Daisuke Aoki, **Hiroharu Ajiro***, "One-shot Preparation of Thermoresponsive Comb Polyurethane Hydrogel for Both High Toughness and Volume Switching", *Macromol. Rapid Commun.* 2021, 42(13) 2100128.
- (14) Koichi Irikura, Natjaya Ekapakul, Chantiga Choochottiros, Nalinthip Chanthaset, Hiroaki Yoshida, **Hiroharu Ajiro***, "Fabrication of flexible blend films using a chitosan derivative and poly(trimethylene carbonate)", *Polym. J.* 2021, 53(7) 823–833.
- (15) Daisuke Aoki, **Hiroharu Ajiro***, "Clarification of the effects of topological isomer on mechanical strength of comb polyurethane", *Polym. Chem.* 2021, 12(10), 1533-1539.
- (16) Steffen Seitz, Masaya Tsujimoto, Nalinthip Chanthaset, Hiroaki Yoshida, **Hiroharu Ajiro***, "Novel approach to recover copper ions using poly(ethylene imine) based layer-by-layer coatings on icosane particles", *J. Appl. Polym. Sci.* 2021, 138, 50202.
- (17) Jaeyeong Choi, **Hiroharu Ajiro***, "Preparation of novel branch polymer by lactide polymerization using pseudorotaxane as initiator", *J. Network Polym., Jpn.* 2020, 41, 226-236.
- (18) Narumi Kumamoto, Nalinthip Chanthaset, **Hiroharu Ajiro***, "Polylactide stereocomplex bearing vinyl groups at chain ends prepared by allyl alcohol, malic acid, and citric acid", *Polym. Degrad. Stab.* 2020, 180, 109311(1-7).
- (19) Hiroaki Nobuoka, Masakazu Nagasawa, Nalinthip Chanthaset, Hiroaki Yoshida, Yoshiaki Haramiishi, **Hiroharu Ajiro***, "Synthesis of amphiphilic block copolymer using trimethylene carbonate bearing oligo(ethylene glycol) and investigation of thin film including cilostazol", *J. Polym. Sci. Part A., Polym. Chem.* 2020, 58, 2347-2354.
- (20) Yoshiaki Haramiishi, Ryo Kawatani, Nalinthip Chanthaset, **Hiroharu Ajiro***, "Preparation of Block Copolymer of Poly(trimethylene carbonate) with Oligo(ethylene glycol) and the Surface Properties of the Dip Coated Film", *Polym. Test.* 2020, 86, 106484.
- (21) Ryo Kawatani, Malcolm A. Kelland, **Hiroharu Ajiro***, "Design of a Rigid Side Chain for Poly(*N*-vinylamide) Derivatives Bearing an Alkenyl Group and Evaluation of Their Ability to Inhibit Tetrahydrofuran Hydrate Crystal Growth", *J. Appl. Polym. Sci.* 2020, 137(38), 49154(1-9).
- (22) Natjaya Ekapakul, Koichi Irikura, **Hiroharu Ajiro**, Chantiga Choochottiros*, "Star-shaped Polycaprolactone/Chitosan Composite Hydrogels: Fabrication and Characterization", *Polym. Int.* 2020, 69, 584-591.
- (23) Qian Zhang*, Malcolm A. Kelland*, **Hiroharu Ajiro**, "Polyvinylsulfonamides as Kinetic Hydrate Inhibitors", *Energ Fuel*, 2020, 34, 2230-2237.
- (24) Nalinthip Chanthaset, Klaus Beckerle, Jun Okuda, **Hiroharu Ajiro***, "Investigation of Polymerization of 5-[2-(2-methoxyethoxy)ethoxy]-ethoxymethyl]-5-methyl-1,3-dioxo-2-one by Organometallic Catalysts", *J. Appl. Polym. Sci.* 2020, 137(36), 49073(1-12).
- (25) Nobuo Murase*, Tsuyoshi Ando, **Hiroharu Ajiro***, "Synthesis of Spiropyran-Based Methacrylate at the Benzopyran Moiety and Control of the Water Repellency and Cell Adhesion of its Polymer Film", *J. Mater. Chem. B.* 2020, 8, 1489-1495.
- (26) Kenta Yamatani, Ryo Kawatani, **Hiroharu Ajiro***, "Synthesis of Glucosamine Derivative with Double Caffeic Acid Moieties at *N*- and 6-*O*-Positions for Developments of Natural Based Materials", *J. Mol. Struct.* 2020, 1206, 127689(1-6).
- (27) Preeyarad Charoensumran, **Hiroharu Ajiro***, "Controlled Release of Testosterone by Polymer-polymer Interaction Enriched Organogel as a Novel Transdermal Drug Delivery System: Effect of Limonene/PG and Carbon-chain Length on

- Drug Permeability", *React. Funct. Polym.* **2020**, *148*, 104461(1-9).
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