Akihiko Toda

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/5770561/publications.pdf

Version: 2024-02-01

135 papers	3,614 citations	126708 33 h-index	174990 52 g-index
136 all docs	136 docs citations	136 times ranked	1765 citing authors

#	Article	IF	Citations
1	Insights into polymer crystallization and melting from fast scanning chip calorimetry. Polymer, 2016, 91, 239-263.	1.8	224
2	Superheating of the melting kinetics in polymer crystals: a possible nucleation mechanism. Polymer, 2002, 43, 1667-1679.	1.8	134
3	Equilibrium Melting Temperature of Isotactic Polypropylene with High Tacticity:â€‰ 1. Determination by Differential Scanning Calorimetry. Macromolecules, 2003, 36, 4790-4801.	2.2	127
4	Three-dimensional morphology of PVDF single crystals forming banded spherulites. Polymer, 2001, 42, 2223-2233.	1.8	95
5	Lamellar Thickening in Isotactic Polypropylene with High Tacticity Crystallized at High Temperature. Macromolecules, 2000, 33, 9069-9075.	2.2	89
6	Melting of polymer crystals observed by temperature modulated d.s.c. and its kinetic modelling. Polymer, 1998, 39, 5093-5104.	1.8	84
7	Branching and Higher Order Structure in Banded Polyethylene Spherulites. Macromolecules, 2008, 41, 2484-2493.	2.2	84
8	A new method of analysing transformation kinetics with temperature modulated differential scanning calorimetry: application to polymer crystal growth. Polymer, 1997, 38, 231-233.	1.8	79
9	Equilibrium Melting Temperature of Isotactic Polypropylene with High Tacticity. 2. Determination by Optical Microscopy. Macromolecules, 2003, 36, 4802-4812.	2.2	73
10	Melting behaviors of polyethylene crystals: An application of fast-scan DSC. Polymer, 2014, 55, 3186-3194.	1.8	72
11	Two-step formation of entanglement from disentangled polymer melt detected by using nucleation rate. Polymer, 2006, 47, 6422-6428.	1.8	70
12	Role of epitaxy of nucleating agent (NA) in nucleation mechanism of polymers. Polymer, 2007, 48, 401-408.	1.8	69
13	Kinetic study of the IIâ€“I phase transition of isotactic polybutene-1. Polymer, 2010, 51, 5532-5538.	1.8	65
14	Influence of Amorphous Component on Melting of Semicrystalline Polymers. Macromolecules, 2011, 44, 8042-8055.	2.2	64
15	An evaluation of thermal lags of fast-scan microchip DSC with polymer film samples. Thermochimica Acta, 2014, 589, 262-269.	1.2	63
16	Melting Kinetics of Polymer Crystals with an Entropic Barrier. Macromolecules, 2008, 41, 120-127.	2.2	62
17	Growth mode and curved lateral habits of polyethylene single crystals. Faraday Discussions, 1993, 95, 129.	1.6	61
18	A new analyzing method of temperature modulated DSC of exo- or endo-thermic process: Application to polyethylene crystallization. Thermochimica Acta, 1997, 293, 47-63.	1.2	61

#	Article	IF	Citations
19	Role of entanglement in nucleation and â€˜melt relaxationâ€™ of polyethylene. Polymer, 2002, 43, 6585-6593.	1.8	59
20	Melting and recrystallization kinetics of poly(butylene terephthalate). Polymer, 2017, 109, 307-314.	1.8	54
21	Instability-Driven Branching of Lamellar Crystals in Polyethylene Spherulites. Macromolecules, 2008, 41, 7505-7512.	2.2	51
22	Molecular weight dependence of the lateral growth rate of polyethylene 2. Folded-chain crystals. Polymer, 1998, 39, 4535-4539.	1.8	47
23	Two crystal populations with different melting/reorganization kinetics of isothermally crystallized polyamide 6. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 2126-2138.	2.4	47
24	Method for Calculation of the Lamellar Thickness Distribution of Not-Reorganized Linear Polyethylene Using Fast Scanning Calorimetry in Heating. Macromolecules, 2015, 48, 8831-8837.	2.2	45
25	Formation mechanism of shish in the oriented melt (I)â€”bundle nucleus becomes to shish. Polymer, 2005, 46, 1675-1684.	1.8	44
26	An application of temperature modulated differential scanning calorimetry to the exothermic process of poly(ethylene terephthalate) crystallization. Polymer, 1997, 38, 2849-2852.	1.8	42
27	Heating rate dependence of melting peak temperature examined by DSC of heat flux type. Journal of Thermal Analysis and Calorimetry, 2016, 123, 1795-1808.	2.0	42
28	Melting kinetics of it-polypropylene crystals over wide heating rates. Journal of Thermal Analysis and Calorimetry, 2013, 113, 1231-1237.	2.0	41
29	Combining fast-scan chip-calorimeter with molecular simulations to investigate superheating behaviors of lamellar polymer crystals. Polymer, 2014, 55, 4307-4312.	1.8	41
30	Kinetics of irreversible melting of polyethylene crystals revealed by temperature modulated DSC. Thermochimica Acta, 1998, 324, 95-107.	1.2	40
31	Molecular Weight Dependence of Primary Nucleation Rate of Polyethylene I. An Extended Chain Single Crystal. Polymer Journal, 1999, 31, 749-758.	1.3	36
32	Three-dimensional shape of polyethylene single crystals grown from dilute solutions and from the melt. Polymer, 2005, 46, 8708-8716.	1.8	36
33	Quantitative understanding of two distinct melting kinetics of an isothermally crystallized poly(ether ether ketone). Polymer, 2016, 99, 97-104.	1.8	36
34	Thermo-mechanical coupling and self-excited oscillation in the neck propagation of PET films. Polymer, 2002, 43, 947-951.	1.8	35
35	Crystal Growth of Isotactic Polystyrene in Ultrathin Films: Thickness and Temperature Dependence. Journal of Macromolecular Science - Physics, 2006, 45, 1141-1147.	0.4	33
36	The Impurity Effect on the Growth Mode and Lateral Habit of Polymer Single Crystals. Journal of the Physical Society of Japan, 1986, 55, 3419-3427.	0.7	31

#	Article	IF	Citations
37	Power Law of Molecular Weight of the Nucleation Rate of Folded Chain Crystals of Polyethylene. Macromolecules, 2002, 35, 6985-6991.	2.2	31
38	Branching and re-orientation of lamellar crystals in non-banded poly(butene-1) spherulites. Polymer, 2008, 49, 1685-1692.	1.8	31
39	Second-order phase transition of high isotactic polypropylene at high temperature. Polymer, 2002, 43, 1473-1481.	1.8	27
40	Dynamicalâ€“Morphological Property of Adhesive Tape in Peeling. Journal of the Physical Society of Japan, 2002, 71, 1618-1621.	0.7	26
41	AFM observation of polyethylene single crystals: selective handedness of screw dislocations in a chair type. Polymer, 2003, 44, 6135-6138.	1.8	26
42	Crystallization, recrystallization, and melting of polymer crystals on heating and cooling examined with fast scanning calorimetry. Polymer Crystallization, 2018, 1, e10005.	0.5	26
43	Molecular Weight Dependence of Equilibrium Melting Temperature and Lamellar Thickening of Isotactic Polypropylene with High Tacticity. Journal of Macromolecular Science - Physics, 2003, 42, 733-752.	0.4	25
44	Stability of Tunnel Structure and Relationship between Peel Load and Spatiotemporal Pattern by Deformed Adhesive during Peeling. Journal of the Physical Society of Japan, 2004, 73, 2342-2346.	0.7	25
45	Oscillatory neck propagation in polymer films: 2. Polymer, 1994, 35, 3638-3642.	1.8	24
46	Formation mechanism of shish in the oriented melt (II)â€”two different growth mechanisms along and perpendicular to the flow direction. Polymer, 2005, 46, 1685-1692.	1.8	24
47	Size distribution and shape of nano-nucleus of polyethylene simultaneously determined by SAXS. Polymer, 2007, 48, 382-392.	1.8	24
48	Branching and Higher Order Structure in Banded Poly(vinylidene fluoride) Spherulites. Polymer Journal, 2008, 40, 905-909.	1.3	24
49	Growth of banded spherulites of poly(â^’-caprolactone) from the blends: An examination of the modeling of spherulitic growth. Polymer, 2012, 53, 1765-1771.	1.8	24
50	Crystallization and melting of poly(butylene terephthalate) and poly(ethylene terephthalate) investigated by fast-scan chip calorimetry and small angle X-ray scattering. Polymer, 2020, 192, 122303.	1.8	24
51	Atomic Force Microscopy of Solution Grown Polyethylene Single Crystals. Japanese Journal of Applied Physics, 1994, 33, 3771-3774.	0.8	23
52	Temperature-Modulated DSC Applied to the Transformation Kinetics of Polymer Crystallization. Polymer Journal, 1999, 31, 790-794.	1.3	23
53	Morphology and Crystallization Kinetics of it-Polystyrene Spherulites. Macromolecules, 2010, 43, 3837-3843.	2.2	23
54	Crystallization kinetics of poly(butylene terephthalate) and its talc composites. Journal of Applied Polymer Science, 2017, 134, .	1.3	23

#	Article	IF	Citations
55	A Kinetic Theory on the Growth Rate of Polymer Single Crystals. Journal of the Physical Society of Japan, 1985, 54, 1411-1422.	0.7	22
56	Pattern formation and spatiotemporal behavior of adhesive in peeling. Physica D: Nonlinear Phenomena, 2006, 214, 120-131.	1.3	22
57	Microbeam X-ray diffraction of non-banded polymer spherulites of it-polystyrene and it-poly(butene-1). Polymer, 2010, 51, 1837-1844.	1.8	22
58	Computer simulation of the melting kinetics of polymer crystals under condition of modulated temperature. Thermochimica Acta, 1999, 330, 75-83.	1.2	21
59	Direct Evidence of Nucleation During the Induction Period of Polyethylene Crystallization by SAXS. Journal of Macromolecular Science - Physics, 2003, 42, 847-865.	0.4	21
60	An Atomic Force Microscopy Observation of Poly(Vinylidene Fluoride) Banded Spherulites. Journal of Macromolecular Science - Physics, 2003, 42, 753-760.	0.4	21
61	Acceleration Mechanism of Nucleation of Polymers by Nano-sizing of Nucleating Agent. Polymer Journal, 2007, 39, 55-64.	1.3	21
62	Growth kinetics of polyethylene single crystals from dilute solution at low supercoolings. Polymer, 1987, 28, 1645-1651.	1.8	20
63	Nucleation and Morphology of Polyethylene Under Shear Flow. Journal of Macromolecular Science - Physics, 2003, 42, 499-514.	0.4	20
64	Acceleration Mechanism in Critical Nucleation of Polymers by Epitaxy of Nucleating Agent. Polymer Journal, 2009, 41, 228-236.	1.3	19
65	Crystal growth of polyethylene from dilute solution: Growth kinetics of {110} twins and diffusion-limited growth of single crystals. Journal of Polymer Science, Part B: Polymer Physics, 1989, 27, 53-70.	2.4	18
66	Temperature modulated d.s.c. study of poly(ethylene terephthalate) crystallization: 2. Applicability to non-isothermal process. Polymer, 1998, 39, 1439-1443.	1.8	18
67	Molecular weight dependence of lateral growth rate of polyethylene (I) â€" an extended chain single crystal. Polymer, 1998, 39, 1591-1596.	1.8	17
68	Analysis of transitions of liquid crystals and conformationally disordered crystals by temperature-modulated calorimetry. Journal of Polymer Science, Part B: Polymer Physics, 1999, 37, 1539-1544.	2.4	17
69	Crystallization and melting behaviors of poly(vinylidene fluoride) examined by fast-scan calorimetry: Hoffman-Weeks, Gibbs-Thomson and thermal Gibbs-Thomson plots. Polymer, 2019, 169, 11-20.	1.8	17
70	Oscillation and instability of neck propagation in poly(ethylene terephthalate) films. Polymer, 1993, 34, 2306-2314.	1.8	16
71	A calibration of complex heat capacity obtained by temperature-modulated DSC in the melting region of polymer crystals. Polymer, 2000, 41, 8941-8951.	1.8	16
72	Kinetic barrier of pinning in polymer crystallization: Rate equation approach. Journal of Chemical Physics, 2003, 118, 8446-8455.	1.2	16

#	Article	IF	Citations
73	Kinetic Response of An Epoxy Thermosetting System Observed by TMDSC. Magyar AprÃ³vad KÃ¶zlemÃ©nyek, 2000, 60, 821-827.	1.4	15
74	Effect of Entanglement on Nucleation Rate of Polyethylene.. Polymer Journal, 2001, 33, 906-908.	1.3	15
75	Defects in banded spherulites of polymers. Polymer, 2005, 46, 8717-8722.	1.8	14
76	The Narrow Thickness Distribution of Lamellae of Poly(butylene succinate) Formed at Low Melt Supercooling. Macromolecules, 2021, 54, 3366-3376.	2.2	14
77	Atomic Force Microscopy of Isotactic Polystyrene Crystals. Japanese Journal of Applied Physics, 1994, 33, L1628-L1630.	0.8	13
78	Morphology and Growth of Single Crystals of Isotactic Polypropylene from the Melt. Journal of Macromolecular Science - Physics, 2010, 50, 236-247.	0.4	13
79	Structure Evolution in Directional Crystallization of Polymers under Temperature Gradient. Macromolecules, 2012, 45, 852-861.	2.2	13
80	Insertionâ€Crystallizationâ€Induced Lowâ€Temperature Annealing Peaks in Meltâ€Crystallized Poly(<scp>l</scp>â€Lactic Acid). Macromolecular Chemistry and Physics, 2021, 222, 2100177.	1.1	13
81	Effect of a Nucleating Agent on Polymer Crystallization Analyzed Using the Original Avrami Model. Macromolecules, 2022, 55, 2202-2209.	2.2	13
82	Computer simulation of curved crystal habits: polymer crystallization under an anisotropic growth condition. Polymer, 1996, 37, 1621-1627.	1.8	12
83	Application of periodically modulated driving force to the transition kinetics in vinylidene fluoride/trifluoroethylene copolymers. Journal of Chemical Physics, 2001, 114, 6896-6905.	1.2	12
84	Nucleation and size distribution of nucleus during induction period of polyethylene crystallization. Journal of Chemical Physics, 2005, 123, 204906.	1.2	12
85	Acceleration Mechanism of Growth Rates under Shear Flow Due to the Oriented Meltâ€”The Novel Morphology of Spiral Crystal (Spiralite)â€. Macromolecules, 2006, 39, 1515-1524.	2.2	12
86	Fast-scan and temperature-modulated calorimetry of recrystallization of poly(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 222 Td (te	1.2	12
87	Full deconvolution of the instrumental coefficients in scanning calorimeter of heat flux type. Thermochimica Acta, 2005, 436, 15-25.	1.2	11
88	Cellular Crystallization in Thin Melt Film of it-Poly(butene-1): An Implication to Spherulitic Growth from Bulk Melt. Macromolecules, 2011, 44, 9239-9246.	2.2	11
89	Comment on â€œRe-exploring the double-melting behavior of semirigid-chain polymers with an in-situ combination of synchrotron nanofocus X-ray scattering and nanocalorimetryâ€•by Ivanov et al. [European Polymer Journal 81 (2016) 598â€“606.]. European Polymer Journal, 2017, 94, 511-516.	2.6	11
90	Superheated Melting Kinetics of Metastable Chain-Folded Polymer Crystals. Crystal Growth and Design, 2018, 18, 3637-3643.	1.4	11

#	Article	IF	Citations
91	Molecular weight dependence of growth and morphology of it-poly(butene-1) spherulites. Polymer, 2011, 52, 2051-2058.	1.8	10
92	Kinetics of â€œMeltingâ€•of Sucrose Crystals. Crystal Growth and Design, 2018, 18, 2602-2608.	1.4	10
93	Gibbsâ€“Thomson, Thermal Gibbsâ€“Thomson, and Hoffmanâ€“Weeks Plots of Polyethylene Crystals Examined by Fast-Scan Calorimetry and Small-Angle X-ray Scattering. Crystal Growth and Design, 2019, 19, 2493-2502.	1.4	10
94	Melting Kinetics of Superheated Polymer Crystals Examined by Isothermal and Nonisothermal Fast Scanning Calorimetry. Macromolecules, 2021, 54, 8770-8779.	2.2	10
95	Dynamical Stability in the Capillary Flow of Polymer Melt: A Modeling with Statistical Stick-Slip Process. Journal of the Physical Society of Japan, 1999, 68, 77-85.	0.7	9
96	Title is missing!. Magyar AprÃ³vad KÃ¶zlemÃ©nyek, 2001, 64, 775-782.	1.4	9
97	Power law of molecular weight dependence of lateral growth rate of isotactic polypropylene. Polymer, 2006, 47, 7601-7606.	1.8	9
98	Fast limiting behavior of the melting kinetics of polyethylene crystals examined by fast-scan calorimetry. Thermochimica Acta, 2019, 677, 211-216.	1.2	9
99	Effect of multi-step annealing above the glass transition temperature on the crystallization and melting kinetics of semicrystalline polymers. Polymer, 2020, 202, 122712.	1.8	9
100	Temperature-modulated fast scanning calorimetry of isothermal crystallization of Poly(butylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 3	1.8	9
101	On the crystal stabilization during two-step isothermal crystallization of poly(butylene) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50	1.8	9
102	Temperature-Modulated Scanning Calorimetry of Meltingâ€“Recrystallization of Poly(butylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 30	2.0	9
103	Melting point maximum against pressure in poly(4-methyl-pentene-1) crystals. Polymer, 1996, 37, 2285-2287.	1.8	8
104	Morphology, Growth Rate, and Lamellar Thickness of Polymer Crystals. Journal of Macromolecular Science - Physics, 2003, 42, 867-874.	0.4	8
105	Transition kinetics of a Tiâ€“Ni alloy examined by temperature-modulated DSC. Thermochimica Acta, 2005, 431, 98-105.	1.2	8
106	Enhanced Crystallization of Blended Poly(ethylene terephthalate) and Poly(butylene terephthalate). Polymer Journal, 2008, 40, 992-995.	1.3	8
107	Application of a deconvolution method to construct aqueous phase diagram. Thermochimica Acta, 2010, 500, 100-105.	1.2	8
108	In SituElectron Microscopy of Crystal Growth of Isotactic Polystyrene from the Melt. Japanese Journal of Applied Physics, 1992, 31, L626-L627.	0.8	7

#	Article	IF	Citations
109	Supercooling (Î”T) dependence of nano-nucleation of PE by SAXS and proposal of a new nucleation theory. Polymer, 2007, 48, 1116-1126.	1.8	7
110	Small angle X-ray scattering from finite sequence of lamellar stacks of crystalline polymers. Polymer, 2020, 211, 123110.	1.8	7
111	A reinterpretation of the Ozawa model for non-isothermal crystallization at fixed scan rates. Thermochimica Acta, 2022, 707, 179086.	1.2	7
112	Enthalpy relaxation of unconstrained and constrained amorphous phase for low isotacticity polypropylene. Polymer, 2022, 253, 124991.	1.8	7
113	The Growth Kinetics of Polyethylene Twins: Evidence for Nucleation and Growth Processes. Journal of the Physical Society of Japan, 1987, 56, 1631-1634.	0.7	6
114	Isotropic scattering in Hv light scattering from spherulites of polymers. Polymer, 1992, 33, 909-913.	1.8	6
115	Modeling of the Peeling Process of Pressure-sensitive Adhesive Tapes with the Combination of Maxwell Elements. Journal of the Physical Society of Japan, 2004, 73, 2135-2141.	0.7	6
116	A Temperature Modulated DSC Study of Glass Transition in Poly(ethylene terephthalate). Progress of Theoretical Physics Supplement, 1997, 126, 103-106.	0.2	6
117	Nucleation-controlled growth in polyethylene single crystals: Growth and shape of {100} sectors. Journal of Polymer Science, Part B: Polymer Physics, 1989, 27, 1721-1729.	2.4	5
118	Polyethylene crystallization from dilute solutions: adsorption isotherm on the growth face. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 2581.	1.7	5
119	Physical Mechanism of Stick-Slip Behavior in Polymer Melt Extrusion: Temperature Dependence of Flow Curve. Journal of the Physical Society of Japan, 2001, 70, 3268-3273.	0.7	5
120	Kinetic Study on Alpha-Form Crystallization of Mixed-Acid Triacylglycerols POP, PPO, and Their Mixture. Molecules, 2021, 26, 220.	1.7	5
121	Analysis of non-isothermal polymer crystallization at constant scan rates based on the Avrami model. Thermochimica Acta, 2021, 702, 178984.	1.2	5
122	Dynamical Properties in Uniform and Periodic Growth Modes of Ascorbic Acid Crystal Domain from Thin Solution Film. Journal of the Physical Society of Japan, 2014, 83, 064002.	0.7	4
123	Spatiotemporal Patterns Formed by the Dynamics of Bistable Units with Global and Asymmetric Local Interactions. Journal of the Physical Society of Japan, 2012, 81, 043002.	0.7	3
124	Spherulitic Growth in Crystalline Polymers. , 2013, , 1-12.		2
125	Molecular Weight Dependence of Crystal Growth in Isotactic Polystyrene Ultrathin Films. ACS Macro Letters, 2019, 8, 1227-1232.	2.3	2
126	A note on the kinetics of non-isothermal crystallization of polymers. Thermochimica Acta, 2022, 713, 179244.	1.2	2

#	Article	IF	Citations
127	Periodically modulated driving force applied to polymer crystallization in a visco-elastic measurement with temperature modulation. Thermochimica Acta, 2002, 391, 81-86.	1.2	1
128	Dynamic Light Scattering Studies on Crystallization of Isotactic Polystyrene from Dilute Solutions at High Supercoolings. Journal of Macromolecular Science - Physics, 2006, 45, 1149-1157.	0.4	1
129	Mechanical and Thermal Properties of a Hot-melt Adhesive of Tribrock Copolymer Added with a Miscible Homopolymer. Polymer Journal, 2009, 41, 74-82.	1.3	1
130	Reprint of â€œAn evaluation of thermal lags of fast-scan microchip DSC with polymer film samplesâ€• Thermochimica Acta, 2015, 603, 197-204.	1.2	1
131	Growth Kinetics of Polyethylene Single Crystals. , 1993, , 141-152.		1
132	Growth Origins of Polymer Crystals.. Kobunshi, 1997, 46, 261-264.	0.0	0
133	Spatiotemporal patterns formed by deformed adhesive in peeling. Journal of Physics: Conference Series, 2007, 89, 012013.	0.3	0
134	Three-Dimensional Morphology of Polymer Crystals :Single Crystal and Spherulite. Journal of Fiber Science and Technology, 2007, 63, P.395-P.400.	0.0	0
135	Polymer Crystallization. Seikei-Kakou, 2008, 20, 78-83.	0.0	0