Raj Suryanarayanan

List of Publications by Year
in descending order

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173 papers	5,972 citations	57631 44 h-index	110170 64 g-index
176 all docs	176 docs citations	176 times ranked	3457 citing authors

#	Article	IF	Citations
1	Local Mobility in Amorphous Pharmaceuticalsâ€"Characterization and Implications on Stability. Journal of Pharmaceutical Sciences, 2009, 98, 2935-2953.	1.6	197
2	Polymorphism in Anhydrous Theophyllineâ€"Implications on the Dissolution Rate of Theophylline Tablets. Journal of Pharmaceutical Sciences, 1997, 86, 1256-1263.	1.6	175
3	Effect of Preparation Method on Physical Properties of Amorphous Trehalose. Pharmaceutical Research, 2004, 21, 1167-1176.	1.7	143
4	Role of the Strength of Drugâ€"Polymer Interactions on the Molecular Mobility and Crystallization Inhibition in Ketoconazole Solid Dispersions. Molecular Pharmaceutics, 2015, 12, 3339-3350.	2.3	133
5	The Role of Drugâ€"Polymer Hydrogen Bonding Interactions on the Molecular Mobility and Physical Stability of Nifedipine Solid Dispersions. Molecular Pharmaceutics, 2015, 12, 162-170.	2.3	131
6	Crystallization behavior of mannitol in frozen aqueous solutions. Pharmaceutical Research, 2002, 19, 894-900.	1.7	113
7	Quantification of Crystallinity in Substantially Amorphous Materials by Synchrotron X-ray Powder Diffractometry. Pharmaceutical Research, 2005, 22, 1942-1953.	1.7	107
8	In Situ Dehydration of Carbamazepine Dihydrate: A Novel Technique to Prepare Amorphous Anhydrous Carbamazepine. Pharmaceutical Development and Technology, 2000, 5, 257-266.	1.1	100
9	Influence of Molecular Mobility on the Physical Stability of Amorphous Pharmaceuticals in the Supercooled and Glassy States. Molecular Pharmaceutics, 2014, 11, 3048-3055.	2.3	93
10	Correlation between Molecular Mobility and Physical Stability of Amorphous Itraconazole. Molecular Pharmaceutics, 2013, 10, 694-700.	2.3	91
11	Effect of Aging on the Physical Properties of Amorphous Trehalose. Pharmaceutical Research, 2004, 21, 867-874.	1.7	88
12	Crystallization of mannitol below Tg' during freeze-drying in binary and ternary aqueous systems. Pharmaceutical Research, 2002, 19, 901-908.	1.7	87
13	Effective inhibition of mannitol crystallization in frozen solutions by sodium chloride. Pharmaceutical Research, 2003, 20, 660-667.	1.7	86
14	Influence of Processing Conditions on the Physical State of Mannitolâ€"Implications in Freeze-Drying. Pharmaceutical Research, 2007, 24, 370-376.	1.7	81
15	Drug-Excipient Interactions: Effect on Molecular Mobility and Physical Stability of Ketoconazoleâ€"Organic Acid Coamorphous Systems. Molecular Pharmaceutics, 2018, 15, 1052-1061.	2.3	81
16	Molecular Mobility as an Effective Predictor of the Physical Stability of Amorphous Trehalose. Molecular Pharmaceutics, 2012, 9, 3209-3217.	2.3	75
17	Effect of Water on Molecular Mobility and Physical Stability of Amorphous Pharmaceuticals. Molecular Pharmaceutics, 2016, 13, 1339-1346.	2.3	73
18	Determination of the relative amounts of anhydrous carbamazepine (C15H12N2O) and carbamazepine dihydrate (C15H12N2O.2H2O) in a mixture by powder x-ray diffractometry. Pharmaceutical Research, 1989, 06, 1017-1024.	1.7	72

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19	Influence of the Active Pharmaceutical Ingredient Concentration on the Physical State of Mannitolâ€"Implications in Freeze-Drying. Pharmaceutical Research, 2005, 22, 1978-1985.	1.7	71
20	Trehalose Crystallization During Freeze-Drying: Implications On Lyoprotection. Journal of Physical Chemistry Letters, 2010, 1, 510-514.	2.1	70
21	Phase transitions of glycine in frozen aqueous solutions and during freeze-drying. , 2001, 18, 1448-1454.		67
22	Recent advances in the characterization of amorphous pharmaceuticals by X-ray diffractometry. Advanced Drug Delivery Reviews, 2016, 100, 183-193.	6.6	65
23	Characterization of Phase Transitions During Freeze-Drying by In Situ X-ray Powder Diffractometry. Pharmaceutical Development and Technology, 1998, 3, 579-586.	1.1	64
24	Correlation between Molecular Mobility and Physical Stability in Pharmaceutical Glasses. Molecular Pharmaceutics, 2016, 13, 1267-1277.	2.3	63
25	Evaluation of two concepts of crystallinity using calcium gluceptate as a model compound. International Journal of Pharmaceutics, 1985, 24, 1-17.	2.6	61
26	Characterization and Crystal Structure of Dâ€Mannitol Hemihydrate. Journal of Pharmaceutical Sciences, 2004, 93, 2800-2809.	1.6	60
27	Controlling the physical form of mannitol in freeze-dried systems. European Journal of Pharmaceutics and Biopharmaceutics, 2013, 85, 207-213.	2.0	60
28	Compression-Induced Crystallization of Amorphous Indomethacin in Tablets: Characterization of Spatial Heterogeneity by Two-Dimensional X-ray Diffractometry. Molecular Pharmaceutics, 2015, 12, 253-263.	2.3	60
29	Phosphonooxymethyl Prodrug of Triptolide: Synthesis, Physicochemical Characterization, and Efficacy in Human Colon Adenocarcinoma and Ovarian Cancer Xenografts. Journal of Medicinal Chemistry, 2015, 58, 9334-9344.	2.9	59
30	Solute Crystallization in Mannitolâ€"Glycine Systemsâ€"Implications on Protein Stabilization in Freezeâ€Dried Formulations. Journal of Pharmaceutical Sciences, 2003, 92, 2272-2283.	1.6	54
31	â€œpH Swingâ€•in Frozen Solutionsâ€"Consequence of Sequential Crystallization of Buffer Components. Journal of Physical Chemistry Letters, 2010, 1, 265-268.	2.1	54
32	Effect of Polymer Molecular Weight on the Crystallization Behavior of Indomethacin Amorphous Solid Dispersions. Crystal Growth and Design, 2017, 17, 3142-3150.	1.4	54
33	Influence of Environmental Conditions on the Kinetics and Mechanism of Dehydration of Carbamazepine Dihydrate. Pharmaceutical Development and Technology, 1998, 3, 587-596.	1.1	53
34	Glycine Crystallization in Frozen and Freeze-dried Systems: Effect of pH and Buffer Concentration. Pharmaceutical Research, 2007, 24, 593-604.	1.7	53
35	Crystallization of Trehalose in Frozen Solutions and its Phase Behavior during Drying. Pharmaceutical Research, 2010, 27, 2374-2383.	1.7	53
36	Physical Stability and Dissolution Behavior of Ketoconazoleâ€"Organic Acid Coamorphous Systems. Molecular Pharmaceutics, 2018, 15, 1862-1869.	2.3	53

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37	Characterization of frozen aqueous solutions by low temperature X-ray powder diffractometry. , 1998, 15, 194-199.		52
38	Mechanism of Amorphous Itraconazole Stabilization in Polymer Solid Dispersions: Role of Molecular Mobility. Molecular Pharmaceutics, 2014, 11, 4228-4237.	2.3	51
39	Quantitation of the relative amounts of anhydrous carbamazepine (C15H12N2O) and carbamazepine dihydrate (C15H12N2O.2H2O) in a mixture by solid-state nuclear magnetic resonance (NMR). Pharmaceutical Research, 1990, 07, 184-187.	1.7	50
40	Physical Characterization of Dibasic Calcium Phosphate Dihydrate and Anhydrate. Journal of Pharmaceutical Sciences, 2009, 98, 905-916.	1.6	50
41	Stabilizers and their interaction with formulation components in frozen and freeze-dried protein formulations. Advanced Drug Delivery Reviews, 2021, 173, 1-19.	6.6	49
42	Quantitation of crystallinity in substantially amorphous pharmaceuticals and study of crystallization kinetics by X-ray powder diffractometry. Powder Diffraction, 2000, 15, 2-6.	0.4	47
43	Measurement of enthalpic relaxation by differential scanning calorimetryâ€"effect of experimental conditions. Thermochimica Acta, 2005, 433, 173-182.	1.2	47
44	Processing-Induced Phase Transitions of Theophyllineâ€"Implications on the Dissolution of Theophylline Tablets. Journal of Pharmaceutical Sciences, 2007, 96, 1434-1444.	1.6	47
45	Applications of pressure differential scanning calorimetry in the study of pharmaceutical hydrates. International Journal of Pharmaceutics, 1997, 157, 209-218.	2.6	45
46	Influence of Crystallizing and Non-crystallizing Cosolutes on Trehalose Crystallization During Freeze-Drying. Pharmaceutical Research, 2010, 27, 2384-2393.	1.7	45
47	The Role of Polymer Concentration on the Molecular Mobility and Physical Stability of Nifedipine Solid Dispersions. Molecular Pharmaceutics, 2015, 12, 1477-1484.	2.3	45
48	A method for the rapid evaluation of the physical stability of pharmaceutical hydrates. Thermochimica Acta, 1999, 329, 163-170.	1.2	44
49	Use of Glancing Angle X-Ray Powder Diffractometry to Depth-Profile Phase Transformations During Dissolution of Indomethacin and Theophylline Tablets. Pharmaceutical Research, 2004, 21, 149-159.	1.7	44
50	Unintended Water Mediated Cocrystal Formation in Carbamazepine and Aspirin Tablets. Molecular Pharmaceutics, 2011, 8, 982-989.	2.3	44
51	Ionization States in the Microenvironment of Solid Dosage Forms: Effect of Formulation Variables and Processing. Pharmaceutical Research, 2006, 23, 2454-2468.	1.7	43
52	Strength of Drugâ€"Polymer Interactions: Implications for Crystallization in Dispersions. Crystal Growth and Design, 2016, 16, 5141-5149.	1.4	43
53	Characterization of Phosphate Buffered Saline (PBS) in Frozen State and after Freeze-Drying. Pharmaceutical Research, 2019, 36, 98.	1.7	43
54	Freezing-induced protein aggregation - Role of pH shift and potential mitigation strategies. Journal of Controlled Release, 2020, 323, 591-599.	4.8	43

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55	Investigation of the Multi-Step Dehydration Reaction of Theophylline Monohydrate Using 2-Dimensional Powder X-ray Diffractometry. Pharmaceutical Research, 2006, 23, 2393-2404.	1.7	41
56	Impact of Freeze-Drying on Ionization of Sulfonephthalein Probe Molecules in Trehaloseâ€“Citrate Systems. Journal of Pharmaceutical Sciences, 2006, 95, 1498-1510.	1.6	40
57	Crystalline to amorphous transition of disodium hydrogen phosphate during primary drying. Pharmaceutical Research, 2003, 20, 802-803.	1.7	39
58	Enthalpic relaxation in frozen aqueous trehalose solutions. Thermochimica Acta, 2003, 405, 225-234.	1.2	39
59	Partially Crystalline Systems in Lyophilization: II. Withstanding Collapse at High Primary Drying Temperatures and Impact on Protein Activity Recovery. Journal of Pharmaceutical Sciences, 2005, 94, 809-820.	1.6	39
60	Crosslinking: An avenue to develop stable amorphous solid dispersion with high drug loading and tailored physical stability. Journal of Controlled Release, 2019, 311-312, 212-224.	4.8	39
61	Crystallization of D-Mannitol in Binary Mixtures with NaCl: Phase Diagram and Polymorphism. Pharmaceutical Research, 2003, 20, 1939-1945.	1.7	38
62	Quantification of glycine crystallinity by near-infrared (NIR) spectroscopy. Journal of Pharmaceutical Sciences, 2004, 93, 2439-2447.	1.6	38
63	Structure in Dehydrated Trehalose Dihydrateâ€”Evaluation of the Concept of Partial Crystallinity. Pharmaceutical Research, 2006, 23, 2356-2367.	1.7	37
64	Mutual Influence of Mannitol and Trehalose on Crystallization Behavior in Frozen Solutions. Pharmaceutical Research, 2016, 33, 1413-1425.	1.7	36
65	Mechanistic Insight into Caffeineâ€“Oxalic Cocrystal Dissociation in Formulations: Role of Excipients. Molecular Pharmaceutics, 2017, 14, 3879-3887.	2.3	35
66	Mechanisms by which crystalline mannitol improves the reconstitution time of high concentration lyophilized protein formulations. European Journal of Pharmaceutics and Biopharmaceutics, 2018, 131, 70-81.	2.0	35
67	Crystal structure of anhydrous Î´-D-mannitol. Powder Diffraction, 2003, 18, 214-218.	0.4	34
68	Raffinose Crystallization During Freeze-Drying and Its Impact on Recovery of Protein Activity. Pharmaceutical Research, 2005, 22, 303-309.	1.7	34
69	Crystallization of Cephalothin Sodium During Lyophilization from tert-Butyl Alcohol?Water Cosolvent System. Pharmaceutical Research, 2005, 22, 153-160.	1.7	34
70	Calorimetric and Diffractometric Evidence for the Sequential Crystallization of Buffer Components and the Consequential pH Swing in Frozen Solutions. Journal of Physical Chemistry B, 2010, 114, 4915-4923.	1.2	34
71	The Effect of Crystallizing and Non-crystallizing Cosolutes on Succinate Buffer Crystallization and the Consequent pH Shift in Frozen Solutions. Pharmaceutical Research, 2011, 28, 374-385.	1.7	33
72	Quantitative analyses of complex pharmaceutical mixtures by the Rietveld method. Powder Diffraction, 2001, 16, 20-24.	0.4	32

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73	Solid-state properties of tobramycin. Pharmaceutical Research, 1991, 08, 1159-1165.	1.7	30
74	Salt Disproportionation in the Solid State: Role of Solubility and Counterion Volatility. Molecular Pharmaceutics, 2016, 13, 4141-4151.	2.3	30
75	Solute Crystallization in Frozen Systemsâ€“Use of Synchrotron Radiation to Improve Sensitivity. Pharmaceutical Research, 2006, 23, 2368-2374.	1.7	29
76	Insights into the dehydration behavior of thiamine hydrochloride (Vitamin B1) hydrates: Part I. Journal of Pharmaceutical Sciences, 2010, 99, 816-827.	1.6	29
77	Effects of Excipient Interactions on the State of the Freeze-Concentrate and Protein Stability. Pharmaceutical Research, 2017, 34, 462-478.	1.7	29
78	The Influence of the Strength of Drugâ€“Polymer Interactions on the Dissolution of Amorphous Solid Dispersions. Molecular Pharmaceutics, 2021, 18, 174-186.	2.3	29
79	Determination of the Relative Amounts of Î±-carbamazepine and Î²-carbamazepine in a Mixture by Powder X-Ray Diffractometry. Powder Diffraction, 1990, 5, 155-159.	0.4	28
80	Applications of pressure differential scanning calorimetry in the study of pharmaceutical hydrates. II. Ampicillin trihydrate. International Journal of Pharmaceutics, 1998, 170, 63-72.	2.6	28
81	X-Ray Powder Diffractometry. Drugs and the Pharmaceutical Sciences, 1995, , 187-221.	0.1	27
82	Investigation of solid-state reactions using variable temperature X-ray powder diffractrometry. I. Aspartame hemihydrate. Pharmaceutical Research, 2001, 18, 267-273.	1.7	27
83	Role of Coformer and Excipient Properties on the Solid-State Stability of Theophylline Cocrystals. Crystal Growth and Design, 2019, 19, 868-875.	1.4	27
84	Synchrotron X-ray Diffraction Investigation of the Anomalous Behavior of Ice During Freezing of Aqueous Systems. Journal of Physical Chemistry B, 2009, 113, 6177-6182.	1.2	26
85	Challenges in Transitioning Cocrystals from Bench to Bedside: Dissociation in Prototype Drug Product Environment. Molecular Pharmaceutics, 2018, 15, 3297-3307.	2.3	26
86	Effect of Organic Acids on Molecular Mobility, Physical Stability, and Dissolution of Ternary Ketoconazole Spray-Dried Dispersions. Molecular Pharmaceutics, 2019, 16, 41-48.	2.3	26
87	Use of a Plasticizer for Physical Stability Prediction of Amorphous Solid Dispersions. Crystal Growth and Design, 2017, 17, 4315-4325.	1.4	25
88	Quantitative analysis of the active ingredient in a multi-component tablet formulation by powder X-ray diffractometry. International Journal of Pharmaceutics, 1991, 77, 287-295.	2.6	24
89	Compression-Induced Crystallization in Sucrose-Polyvinylpyrrolidone Amorphous Solid Dispersions. Crystal Growth and Design, 2018, 18, 839-848.	1.4	24
90	An implantable dosage form for the treatment of bone infections. Pharmaceutical Research, 1992, 09, 993-1002.	1.7	23

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91	Partially Crystalline Systems in Lyophilization: I. Use of Ternary State Diagrams to Determine Extent of Crystallization of Bulking Agent. Journal of Pharmaceutical Sciences, 2005, 94, 798-808.	1.6	23
92	Implications of Global and Local Mobility in Amorphous Sucrose and Trehalose as Determined by Differential Scanning Calorimetry. Pharmaceutical Research, 2009, 26, 1064-1072.	1.7	23
93	Phase Transitions in Frozen Systems and During Freezeâ€“Drying: Quantification Using Synchrotron X-Ray Diffractometry. Pharmaceutical Research, 2009, 26, 1596-1606.	1.7	23
94	Thermophysical Properties of Carboxylic and Amino Acid Buffers at Subzero Temperatures: Relevance to Frozen State Stabilization. Journal of Physical Chemistry B, 2011, 115, 7154-7164.	1.2	23
95	Investigation of Spatial Heterogeneity of Salt Disproportionation in Tablets by Synchrotron X-ray Diffractometry. Molecular Pharmaceutics, 2017, 14, 1133-1144.	2.3	23
96	Rapid Assessment of the Physical Stability of Amorphous Solid Dispersions. Crystal Growth and Design, 2017, 17, 2478-2485.	1.4	23
97	Molecular Motions in Sucrose-PVP and Sucrose-Sorbitol Dispersions: I. Implications of Global and Local Mobility on Stability. Pharmaceutical Research, 2011, 28, 2191-2203.	1.7	22
98	Calorimetry and complementary techniques to characterize frozen and freeze-dried systems. Advanced Drug Delivery Reviews, 2012, 64, 384-395.	6.6	22
99	Surface Acidity and Solid-State Compatibility of Excipients with an Acid-Sensitive API: Case Study of Atorvastatin Calcium. AAPS PharmSciTech, 2015, 16, 354-363.	1.5	22
100	Role of Lattice Disorder in Water-Mediated Dissociation of Pharmaceutical Cocrystal Systems. Molecular Pharmaceutics, 2019, 16, 3167-3177.	2.3	22
101	Simultaneous quantification of an enantiomer and the racemic compound of ibuprofen by X-ray powder diffractometry. , 1997, 14, 1176-1180.		21
102	Unusual Effect of Water Vapor Pressure on Dehydration of Dibasic Calcium Phosphate Dihydrate. Journal of Pharmaceutical Sciences, 2011, 100, 1456-1466.	1.6	21
103	A supramolecular synthon approach to design amorphous solid dispersions with exceptional physical stability. Chemical Communications, 2019, 55, 5551-5554.	2.2	21
104	Influence of processing-induced phase transformations on the dissolution of theophylline tablets. AAPS PharmSciTech, 2004, 5, 39-49.	1.5	19
105	Correlation between Chemical Reactivity and the Hammett Acidity Function in Amorphous Solids Using Inversion of Sucrose as a Model Reaction. Journal of Pharmaceutical Sciences, 2008, 97, 274-286.	1.6	19
106	Quantification, Mechanism, and Mitigation of Active Ingredient Phase Transformation in Tablets. Molecular Pharmaceutics, 2013, 10, 3128-3136.	2.3	19
107	Instability in Theophylline and Carbamazepine Hydrate Tablets: Cocrystal Formation Due to Release of Lattice Water. Pharmaceutical Research, 2013, 30, 1779-1789.	1.7	19
108	Accelerated Physical Stability Testing of Amorphous Dispersions. Molecular Pharmaceutics, 2016, 13, 2661-2666.	2.3	19

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109	Compression-Induced Polymorphic Transformation in Tablets: Role of Shear Stress and Development of Mitigation Strategies. Journal of Pharmaceutical Sciences, 2019, 108, 476-484.	1.6	18
110	Influence of processing-induced phase transformations on the dissolution of theophylline tablets. AAPS PharmSciTech, 2004, 5, 39-49.	1.5	18
111	Quantitative analysis of the active tablet ingredient by powder X-ray diffractometry. Pharmaceutical Research, 1991, 08, 393-399.	1.7	17
112	Investigation of PEG Crystallization in Frozen PEGâ€“Sucroseâ€“Water Solutions: II. Characterization of the Equilibrium Behavior During Freeze-Thawing. Journal of Pharmaceutical Sciences, 2010, 99, 4510-4524.	1.6	17
113	Use of Dielectric Spectroscopy To Monitor Molecular Mobility in Glassy and Supercooled Trehalose. Journal of Physical Chemistry B, 2012, 116, 11728-11736.	1.2	17
114	Phase transitions of calcium gluceptate. International Journal of Pharmaceutics, 1986, 32, 213-221.	2.6	16
115	Solid-vapor interactions: Influence of environmental conditions on the dehydration of carbamazepine dihydrate. AAPS PharmSciTech, 2003, 4, 539-548.	1.5	16
116	The effect of additives on the crystallization of cefazolin sodium during freeze-drying. Pharmaceutical Research, 2003, 20, 283-291.	1.7	16
117	Predicting the Crystallization Propensity of Carboxylic Acid Buffers in Frozen Systemsâ€”Relevance to Freeze-Drying. Journal of Pharmaceutical Sciences, 2011, 100, 1288-1293.	1.6	16
118	Stabilization of Amorphous Drugs by Polymers: The Role of Overlap Concentration (C*). Molecular Pharmaceutics, 2020, 17, 4401-4406.	2.3	16
119	Phase Transformation in Thiamine Hydrochloride Tablets: Influence on Tablet Microstructure, Physical Properties, and Performance. Journal of Pharmaceutical Sciences, 2012, 101, 1410-1422.	1.6	15
120	Pressure and Temperature Induced Dual Responsive Molecular Crystals: Effect of Polymorphism. Crystal Growth and Design, 2022, 22, 615-624.	1.4	15
121	X-Ray Powder Diffractometry of Intact Film Coated Tabletsâ€”An Approach to Monitor the Physical Form of the Active Pharmaceutical Ingredient During Processing and Storage. Journal of Pharmaceutical Sciences, 2007, 96, 2029-2036.	1.6	14
122	Monitoring Phase Transformations in Intact Tablets of Trehalose by FT-Raman Spectroscopy. AAPS PharmSciTech, 2009, 10, 1420-6.	1.5	14
123	Investigation of PEG Crystallization in Frozen and Freezeâ€Dried PEGylated Recombinant Human Growth Hormoneâ€“Sucrose Systems: Implications on Storage Stability. Journal of Pharmaceutical Sciences, 2011, 100, 3062-3075.	1.6	14
124	t-Butanol Enables Dual Functionality of Mannitol: A Cryoprotectant in Frozen Systems and Bulking Agent in Freeze-Dried Formulations. Molecular Pharmaceutics, 2020, 17, 3075-3086.	2.3	14
125	Investigation of solid-state reactions using variable temperature X-ray powder diffractometry. II. Aminophylline monohydrate. Pharmaceutical Research, 2002, 19, 1265-1273.	1.7	13
126	Processing-induced Phase Transformations and Their Implications on Pharmaceutical Product Quality. , 2006, , 333-364.		13

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127	Azithromycin Hydratesâ€"Implications of Processingâ€Induced Phase Transformations. Journal of Pharmaceutical Sciences, 2014, 103, 3095-3106.	1.6	13
128	Partial Dehydration of Levothyroxine Sodium Pentahydrate in a Drug Product Environment: Structural Insights into Stability. Molecular Pharmaceutics, 2020, 17, 3915-3929.	2.3	13
129	A Novel X-ray Powder Diffractometric Method for Studying the Reaction between Pseudoephedrine Enantiomers. Journal of Pharmaceutical Sciences, 1997, 86, 340-345.	1.6	12
130	The Effect of Bulking Agents on the Chemical Stability of Acid-Sensitive Compounds in Freeze-Dried Formulations: Sucrose Inversion Study. Journal of Pharmaceutical Sciences, 2009, 98, 3387-3396.	1.6	12
131	Investigation of PEG Crystallization in Frozen PEG-Sucrose-Water Solutions. I. Characterization of the Nonequilibrium Behavior during Freeze-Thawing. Journal of Pharmaceutical Sciences, 2010, 99, 2609-2619.	1.6	11
132	Subtraction of DC Conductivity and Annealing: Approaches To Identify Johariâ€"Goldstein Relaxation in Amorphous Trehalose. Molecular Pharmaceutics, 2011, 8, 1416-1422.	2.3	11
133	Salt formation during freeze-drying - an approach to enhance indomethacin dissolution. Pharmaceutical Research, 2015, 32, 3722-3731.	1.7	11
134	Spatial Distribution of Trehalose Dihydrate Crystallization in Tablets by X-ray Diffractometry. Molecular Pharmaceutics, 2015, 12, 3766-3775.	2.3	11
135	A refined phase diagram of the tert-butanolâ€"water system and implications on lyophilization process optimization of pharmaceuticals. Physical Chemistry Chemical Physics, 2020, 22, 1583-1590.	1.3	11
136	Calculation of the Penetration Depth of X-rays in Intact Pharmaceutical Film-Coated Tablets by Microdiffractometory. Pharmaceutical Research, 2006, 23, 2149-2157.	1.7	10
137	Effect of Formulation and Process Parameters on the Disproportionation of Indomethacin Sodium in Buffered Lyophilized Formulations. Pharmaceutical Research, 2018, 35, 21.	1.7	10
138	Stability of lyophilized albumin formulations: Role of excipient crystallinity and molecular mobility. International Journal of Pharmaceutics, 2019, 569, 118568.	2.6	10
139	Applications of synchrotron powder X-ray diffractometry in drug substance and drug product characterization. TrAC - Trends in Analytical Chemistry, 2021, 136, 116181.	5.8	10
140	Reversible Self-Association in Lactate Dehydrogenase during Freezeâ€"Thaw in Buffered Solutions Using Neutron Scattering. Molecular Pharmaceutics, 2021, 18, 4459-4474.	2.3	10
141	Modulation of Microenvironmental Acidity: A Strategy to Mitigate Salt Disproportionation in Drug Product Environment. Molecular Pharmaceutics, 2020, 17, 1324-1334.	2.3	9
142	Anomalous behavior of mannitol hemihydrate: Implications on sucrose crystallization in colyophilized systems. International Journal of Pharmaceutics, 2020, 587, 119629.	2.6	9
143	Levothyroxine Sodium Pentahydrate Tablets â€" Formulation Considerations. Journal of Pharmaceutical Sciences, 2021, 110, 3743-3756.	1.6	9
144	Physical Characterization of Pentamidine Isethionate during Freeze-Dryingâ€"Relevance to development of Stable Lyophilized Product. Journal of Pharmaceutical Sciences, 2012, 101, 1732-1743.	1.6	8

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145	Nanobubbles in Reconstituted Lyophilized Formulations: Interaction With Proteins and Mechanism of Formation. Journal of Pharmaceutical Sciences, 2020, 109, 284-292.	1.6	8
146	Formation of Indomethacinâ€“Saccharin Cocrystals during Wet Granulation: Role of Polymeric Excipients. Molecular Pharmaceutics, 2020, 17, 274-283.	2.3	8
147	Non-destructive determination of the coating film thickness by X-ray powder diffractometry and correlation with the dissolution behavior of film-coated tablets. Journal of Pharmaceutical and Biomedical Analysis, 2010, 51, 952-957.	1.4	7
148	Key factors governing the reconstitution time of high concentration lyophilized protein formulations. European Journal of Pharmaceutics and Biopharmaceutics, 2021, 165, 361-373.	2.0	7
149	Crystallization Propensity of Amorphous Pharmaceuticals: Kinetics and Thermodynamics. Molecular Pharmaceutics, 2022, 19, 472-483.	2.3	7
150	Molecular Mobility as a Predictor of the Water Sorption by Annealed Amorphous Trehalose. Pharmaceutical Research, 2013, 30, 714-720.	1.7	6
151	Development and in vivo evaluation of a novel lyophilized formulation for the treatment of hemorrhagic shock. International Journal of Pharmaceutics, 2018, 537, 162-171.	2.6	6
152	Evaluation of novel formulations of d-Î²-hydroxybutyrate and melatonin in a rat model of hemorrhagic shock. International Journal of Pharmaceutics, 2018, 548, 104-112.	2.6	6
153	Effect of glycerol on the order of the mesophase transitions of supercooled itraconazole. Journal of Molecular Liquids, 2020, 320, 114222.	2.3	6
154	Phase behavior of poloxamer 188 in frozen aqueous solutions â€“ Influence of processing conditions and cosolutes. International Journal of Pharmaceutics, 2021, 609, 121145.	2.6	6
155	Dual Functionality of Bile Acid: Physical Stabilization of Drugs in the Amorphous Form and Solubility Enhancement in Solution. Molecular Pharmaceutics, 2022, 19, 2595-2606.	2.3	6
156	Solid-State Phase Transitions of AG337, an Antitumor Agent. Pharmaceutical Development and Technology, 1999, 4, 623-632.	1.1	5
157	Estimation of Drug Particle Size in Intact Tablets by 2-Dimensional X-Ray Diffractometry. Journal of Pharmaceutical Sciences, 2018, 107, 231-238.	1.6	5
158	Intra-Vial Heterogeneity in Physical Form of Mannitol in Colyophilized Binary Systems. Pharmaceutical Research, 2018, 35, 214.	1.7	5
159	Characterizing Drugâ€“Polymer Interactions in Aqueous Solution with Analytical Ultracentrifugation. Molecular Pharmaceutics, 2021, 18, 246-256.	2.3	5
160	Lower endoscopic delivery of freeze-dried intestinal microbiota results in more rapid and efficient engraftment than oral administration. Scientific Reports, 2021, 11, 4519.	1.6	5
161	Investigating the Influence of Excipients on the Stability of Levothyroxine Sodium Pentahydrate. Molecular Pharmaceutics, 2021, 18, 2683-2693.	2.3	5
162	Design of Ternary Amorphous Solid Dispersions for Enhanced Dissolution of Drug Combinations. Molecular Pharmaceutics, 2022, 19, 2950-2961.	2.3	5

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163	Mannitol hemihydrate in lyophilized protein formulations: Impact of its dehydration during storage on sucrose crystallinity and protein stability. International Journal of Pharmaceutics, 2022, 624, 121974.	2.6	5
164	Modulating the Dehydration Conditions of Adefovir Dipivoxil Dihydrate to Obtain Different Physical Forms of Anhydrate. Journal of Pharmaceutical Sciences, 2015, 104, 1056-1064.	1.6	4
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