

# Michael J Gidley

## List of Publications by Citations

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99 papers	10,489 citations	54 h-index	100 g-index
100 ext. papers	11,767 ext. citations	8 avg, IF	6.53 L-index

#	Paper	IF	Citations
99	Loss of crystalline and molecular order during starch gelatinisation: origin of the enthalpic transition. <i>Carbohydrate Research</i> , <b>1992</b> , 227, 103-112	2.9	935
98	A novel approach for calculating starch crystallinity and its correlation with double helix content: a combined XRD and NMR study. <i>Biopolymers</i> , <b>2008</b> , 89, 761-8	2.2	434
97	Heterogeneity in the chemistry, structure and function of plant cell walls. <i>Nature Chemical Biology</i> , <b>2010</b> , 6, 724-32	11.7	398
96	Crystallisation of malto-oligosaccharides as models of the crystalline forms of starch: minimum chain-length requirement for the formation of double helices. <i>Carbohydrate Research</i> , <b>1987</b> , 161, 291-300	2.9	354
95	Carbon-13 CP/MAS NMR studies of amylose inclusion complexes, cyclodextrins, and the amorphous phase of starch granules: relationships between glycosidic linkage conformation and solid-state carbon-13 chemical shifts. <i>Journal of the American Chemical Society</i> , <b>1988</b> , 110, 3820-3829	16.4	334
94	Molecular organization in starches: a carbon 13 CP/MAS NMR study. <i>Journal of the American Chemical Society</i> , <b>1985</b> , 107, 7040-7044	16.4	317
93	Infrared spectroscopy as a tool to characterise starch ordered structure--a joint FTIR-ATR, NMR, XRD and DSC study. <i>Carbohydrate Polymers</i> , <b>2016</b> , 139, 35-42	10.3	294
92	A method for estimating the nature and relative proportions of amorphous, single, and double-helical components in starch granules by (13)C CP/MAS NMR. <i>Biomacromolecules</i> , <b>2007</b> , 8, 885-91	6.9	260
91	Production of very-high-amylose potato starch by inhibition of SBE A and B. <i>Nature Biotechnology</i> , <b>2000</b> , 18, 551-4	44.5	257
90	Three classes of starch granule swelling: Influence of surface proteins and lipids. <i>Carbohydrate Polymers</i> , <b>2006</b> , 64, 452-465	10.3	251
89	The phase transformations in starch during gelatinisation: a liquid crystalline approach. <i>Carbohydrate Research</i> , <b>2000</b> , 328, 165-76	2.9	236
88	Molecular mechanisms underlying amylose aggregation and gelation. <i>Macromolecules</i> , <b>1989</b> , 22, 351-358	5.5	216
87	Relationship between granule size and in vitro digestibility of maize and potato starches. <i>Carbohydrate Polymers</i> , <b>2010</b> , 82, 480-488	10.3	213
86	Aggregation of amylose in aqueous systems: the effect of chain length on phase behavior and aggregation kinetics. <i>Macromolecules</i> , <b>1989</b> , 22, 341-346	5.5	213
85	Mechanisms of starch digestion by $\alpha$ -amylase-Structural basis for kinetic properties. <i>Critical Reviews in Food Science and Nutrition</i> , <b>2017</b> , 57, 875-892	11.5	210
84	In vitro assembly of cellulose/xyloglucan networks: ultrastructural and molecular aspects. <i>Plant Journal</i> , <b>1995</b> , 8, 491-504	6.9	193
83	Structure and solution properties of tamarind-seed polysaccharide. <i>Carbohydrate Research</i> , <b>1991</b> , 214, 299-314	2.9	183

82	Effect of particle size on kinetics of starch digestion in milled barley and sorghum grains by porcine alpha-amylase. <i>Journal of Cereal Science</i> , <b>2009</b> , 50, 198-204	3.8	181
81	Re-evaluation of the mechanisms of dietary fibre and implications for macronutrient bioaccessibility, digestion and postprandial metabolism. <i>British Journal of Nutrition</i> , <b>2016</b> , 116, 816-33	3.6	179
80	Molecular rearrangement of starch during in vitro digestion: toward a better understanding of enzyme resistant starch formation in processed starches. <i>Biomacromolecules</i> , <b>2008</b> , 9, 1951-8	6.9	173
79	Molecular characterisation of a membrane-bound galactosyltransferase of plant cell wall matrix polysaccharide biosynthesis. <i>Plant Journal</i> , <b>1999</b> , 19, 691-7	6.9	167
78	Impact of down-regulation of starch branching enzyme IIb in rice by artificial microRNA- and hairpin RNA-mediated RNA silencing. <i>Journal of Experimental Botany</i> , <b>2011</b> , 62, 4927-41	7	164
77	Why do gelatinized starch granules not dissolve completely? Roles for amylose, protein, and lipid in granule "ghost" integrity. <i>Journal of Agricultural and Food Chemistry</i> , <b>2007</b> , 55, 4752-60	5.7	150
76	Side-Chain Liquid-Crystalline Model for Starch. <i>Starch/Staerke</i> , <b>2000</b> , 52, 450-460	2.3	139
75	Quantification of the structural features of starch polysaccharides by n.m.r. spectroscopy. <i>Carbohydrate Research</i> , <b>1985</b> , 139, 85-93	2.9	136
74	Intactness of cell wall structure controls the in vitro digestion of starch in legumes. <i>Food and Function</i> , <b>2016</b> , 7, 1367-79	6.1	135
73	Factors affecting the crystalline type (A?C) of native starches and model compounds: a rationalisation of observed effects in terms of polymorphic structures. <i>Carbohydrate Research</i> , <b>1987</b> , 161, 301-304	2.9	126
72	A minor form of starch branching enzyme in potato ( <i>Solanum tuberosum</i> L.) tubers has a major effect on starch structure: cloning and characterisation of multiple forms of SBE A. <i>Plant Journal</i> , <b>1999</b> , 18, 163-71	6.9	125
71	Chiral Side-Chain Liquid-Crystalline Polymeric Properties of Starch. <i>Macromolecules</i> , <b>1998</b> , 31, 7980-7984	5.5	122
70	Synergistic and antagonistic effects of $\alpha$ -Amylase and amyloglucosidase on starch digestion. <i>Biomacromolecules</i> , <b>2013</b> , 14, 1945-54	6.9	119
69	Reliable measurements of the size distributions of starch molecules in solution: Current dilemmas and recommendations. <i>Carbohydrate Polymers</i> , <b>2010</b> , 79, 255-261	10.3	110
68	Consequences of antisense RNA inhibition of starch branching enzyme activity on properties of potato starch. <i>Carbohydrate Polymers</i> , <b>1998</b> , 35, 155-168	10.3	102
67	Physicochemical and structural properties of maize and potato starches as a function of granule size. <i>Journal of Agricultural and Food Chemistry</i> , <b>2011</b> , 59, 10151-61	5.7	101
66	High-Amylose Starches to Bridge the "Fiber Gap": Development, Structure, and Nutritional Functionality. <i>Comprehensive Reviews in Food Science and Food Safety</i> , <b>2019</b> , 18, 362-379	16.4	99
65	Influence of storage conditions on the structure, thermal behavior, and formation of enzyme-resistant starch in extruded starches. <i>Journal of Agricultural and Food Chemistry</i> , <b>2007</b> , 55, 9883-90	5.7	99

64	Gut Fermentation of Dietary Fibres: Physico-Chemistry of Plant Cell Walls and Implications for Health. <i>International Journal of Molecular Sciences</i> , <b>2017</b> , 18,	6.3	97
63	Analysis of the native structure of starch granules with small angle x-ray microfocus scattering. <i>Biopolymers</i> , <b>1999</b> , 49, 91-105	2.2	96
62	Densely packed matrices as rate determining features in starch hydrolysis. <i>Trends in Food Science and Technology</i> , <b>2015</b> , 43, 18-31	15.3	94
61	Molecular, mesoscopic and microscopic structure evolution during amylase digestion of maize starch granules. <i>Carbohydrate Polymers</i> , <b>2012</b> , 90, 23-33	10.3	94
60	Effect of cryo-milling on starches: Functionality and digestibility. <i>Food Hydrocolloids</i> , <b>2010</b> , 24, 152-163	10.6	90
59	Resistance to acid hydrolysis of lipid-complexed amylose and lipid-free amylose in lintnerised waxy and non-waxy barley starches. <i>Carbohydrate Research</i> , <b>1993</b> , 245, 289-302	2.9	90
58	Mechanism for starch granule ghost formation deduced from structural and enzyme digestion properties. <i>Journal of Agricultural and Food Chemistry</i> , <b>2014</b> , 62, 760-71	5.7	87
57	Phase equilibria and gelation in gelatin/maltodextrin systems [Part II: polymer incompatibility in solution. <i>Carbohydrate Polymers</i> , <b>1993</b> , 21, 249-259	10.3	84
56	The interplay of $\alpha$ -amylase and amyloglucosidase activities on the digestion of starch in in vitro enzymic systems. <i>Carbohydrate Polymers</i> , <b>2015</b> , 117, 192-200	10.3	82
55	Freeze-drying changes the structure and digestibility of B-polymorphic starches. <i>Journal of Agricultural and Food Chemistry</i> , <b>2014</b> , 62, 1482-91	5.7	82
54	Effects of structural variation in xyloglucan polymers on interactions with bacterial cellulose. <i>American Journal of Botany</i> , <b>2006</b> , 93, 1402-14	2.7	80
53	Rice starch granule amylolysis--differentiating effects of particle size, morphology, thermal properties and crystalline polymorph. <i>Carbohydrate Polymers</i> , <b>2015</b> , 115, 305-16	10.3	76
52	The adsorption of $\alpha$ -amylase on barley proteins affects the in vitro digestion of starch in barley flour. <i>Food Chemistry</i> , <b>2018</b> , 241, 493-501	8.5	72
51	Food Starch Structure Impacts Gut Microbiome Composition. <i>MSphere</i> , <b>2018</b> , 3,	5	72
50	Characterisation of sweetpotato from Papua New Guinea and Australia: Physicochemical, pasting and gelatinisation properties. <i>Food Chemistry</i> , <b>2011</b> , 126, 1759-70	8.5	70
49	Starch digestion mechanistic information from the time evolution of molecular size distributions. <i>Journal of Agricultural and Food Chemistry</i> , <b>2010</b> , 58, 8444-52	5.7	60
48	Mechanistic investigation of a starch-branching enzyme using hydrodynamic volume SEC analysis. <i>Biomacromolecules</i> , <b>2008</b> , 9, 954-65	6.9	57
47	Differential effects of genetically distinct mechanisms of elevating amylose on barley starch characteristics. <i>Carbohydrate Polymers</i> , <b>2012</b> , 89, 979-91	10.3	56

46	Functional categorisation of dietary fibre in foods: Beyond Soluble vs Insoluble. <i>Trends in Food Science and Technology</i> , <b>2019</b> , 86, 563-568	15.3	56
45	Altering starch branching enzymes in wheat generates high-amylose starch with novel molecular structure and functional properties. <i>Food Hydrocolloids</i> , <b>2019</b> , 92, 51-59	10.6	53
44	Characteristics of starch-based films plasticised by glycerol and by the ionic liquid 1-ethyl-3-methylimidazolium acetate: a comparative study. <i>Carbohydrate Polymers</i> , <b>2014</b> , 111, 841-8	10.3	53
43	Evidence for differential interaction mechanism of plant cell wall matrix polysaccharides in hierarchically-structured bacterial cellulose. <i>Cellulose</i> , <b>2015</b> , 22, 1541-1563	5.5	52
42	Enzymatic hydrolysis of starch in the presence of cereal soluble fibre polysaccharides. <i>Food and Function</i> , <b>2014</b> , 5, 579-86	6.1	52
41	Cryo-milling of starch granules leads to differential effects on molecular size and conformation. <i>Carbohydrate Polymers</i> , <b>2011</b> , 84, 1133-1140	10.3	52
40	Interactions of arabinoxylan and (1,3)(1,4)- $\beta$ -glucan with cellulose networks. <i>Biomacromolecules</i> , <b>2015</b> , 16, 1232-9	6.9	50
39	Tobacco transgenic lines that express fenugreek galactomannan galactosyltransferase constitutively have structurally altered galactomannans in their seed endosperm cell walls. <i>Plant Physiology</i> , <b>2003</b> , 131, 1487-95	6.6	50
38	The seeds of Lotus japonicus lines transformed with sense, antisense, and sense/antisense galactomannan galactosyltransferase constructs have structurally altered galactomannans in their endosperm cell walls. <i>Plant Physiology</i> , <b>2004</b> , 134, 1153-62	6.6	49
37	Granule residues and "ghosts" remaining after heating A-type barley-starch granules in water. <i>Carbohydrate Research</i> , <b>1992</b> , 227, 121-130	2.9	46
36	Structure of cellulose microfibrils in mature cotton fibres. <i>Carbohydrate Polymers</i> , <b>2017</b> , 175, 450-463	10.3	44
35	Extrusion induced low-order starch matrices: Enzymic hydrolysis and structure. <i>Carbohydrate Polymers</i> , <b>2015</b> , 134, 485-96	10.3	43
34	Location and interactions of starches in planta: Effects on food and nutritional functionality. <i>Trends in Food Science and Technology</i> , <b>2019</b> , 93, 158-166	15.3	42
33	Amylase binding to starch granules under hydrolysing and non-hydrolysing conditions. <i>Carbohydrate Polymers</i> , <b>2014</b> , 113, 97-107	10.3	41
32	Characteristics of starch-based films with different amylose contents plasticised by 1-ethyl-3-methylimidazolium acetate. <i>Carbohydrate Polymers</i> , <b>2015</b> , 122, 160-8	10.3	39
31	Enzyme specificity in galactomannan biosynthesis. <i>Planta</i> , <b>1995</b> , 195, 489	4.7	39
30	Rapid quantification of starch molecular order through multivariate modelling of $(^{13}\text{C})$ CP/MAS NMR spectra. <i>Chemical Communications</i> , <b>2015</b> , 51, 14856-8	5.8	38
29	Poroelastic mechanical effects of hemicelluloses on cellulosic hydrogels under compression. <i>PLoS ONE</i> , <b>2015</b> , 10, e0122132	3.7	38

28	High-resolution solid-state NMR of food materials. <i>Trends in Food Science and Technology</i> , <b>1992</b> , 3, 231-236	10.3	35
27	Tribology of swollen starch granule suspensions from maize and potato. <i>Carbohydrate Polymers</i> , <b>2017</b> , 155, 128-135	10.3	34
26	Tea polyphenols enhance binding of porcine pancreatic $\alpha$ -amylase with starch granules but reduce catalytic activity. <i>Food Chemistry</i> , <b>2018</b> , 258, 164-173	8.5	33
25	A more general approach to fitting digestion kinetics of starch in food. <i>Carbohydrate Polymers</i> , <b>2019</b> , 225, 115244	10.3	29
24	Molecular, mesoscopic and microscopic structure evolution during amylase digestion of extruded maize and high amylose maize starches. <i>Carbohydrate Polymers</i> , <b>2015</b> , 118, 224-34	10.3	29
23	Mapping nano-scale mechanical heterogeneity of primary plant cell walls. <i>Journal of Experimental Botany</i> , <b>2016</b> , 67, 2799-816	7	28
22	Resistant Starch in Vitro and in Vivo <b>2009</b> , 449-510		27
21	High-amylose wheat starch: Structural basis for water absorption and pasting properties. <i>Carbohydrate Polymers</i> , <b>2020</b> , 245, 116557	10.3	26
20	$^{13}\text{C}$ -C.p.-m.a.s. n.m.r. studies of frozen solutions of (1 $\rightarrow$ 4)-D-glucans as a probe of the range of conformations of glycosidic linkages: The conformations of cyclomaltohexaose and amylopectin in aqueous solution. <i>Carbohydrate Research</i> , <b>1988</b> , 183, 126-130	2.9	23
19	Structural properties and digestion of green banana flour as a functional ingredient in pasta. <i>Food and Function</i> , <b>2016</b> , 7, 771-80	6.1	21
18	Heterogeneity in maize starch granule internal architecture deduced from diffusion of fluorescent dextran probes. <i>Carbohydrate Polymers</i> , <b>2013</b> , 93, 365-73	10.3	21
17	Protein-starch matrix plays a key role in enzymic digestion of high-amylose wheat noodle. <i>Food Chemistry</i> , <b>2021</b> , 336, 127719	8.5	21
16	Starch branching enzymes contributing to amylose and amylopectin fine structure in wheat. <i>Carbohydrate Polymers</i> , <b>2019</b> , 224, 115185	10.3	20
15	In vitro fermentation of chewed mango and banana: particle size, starch and vascular fibre effects. <i>Food and Function</i> , <b>2015</b> , 6, 2464-74	6.1	20
14	Dependence of in-vitro starch and protein digestions on particle size of field peas ( <i>Pisum sativum</i> L.). <i>LWT - Food Science and Technology</i> , <b>2015</b> , 63, 541-549	5.4	20
13	Microstructure and mechanical properties of arabinoxylan and (1,3;1,4)-D-glucan gels produced by cryo-gelation. <i>Carbohydrate Polymers</i> , <b>2016</b> , 151, 862-870	10.3	17
12	High-amylose wheat and maize starches have distinctly different granule organization and annealing behaviour: A key role for chain mobility. <i>Food Hydrocolloids</i> , <b>2020</b> , 105, 105820	10.6	16
11	Cell wall architecture as well as chemical composition determines fermentation of wheat cell walls by a faecal inoculum. <i>Food Hydrocolloids</i> , <b>2020</b> , 107, 105858	10.6	13

10	Starch granular protein of high-amylose wheat gives innate resistance to amylolysis. <i>Food Chemistry</i> , <b>2020</b> , 330, 127328	8.5	10
9	fermentation outcomes of arabinoxylan and galactoxyloglucan depend on fecal inoculum more than substrate chemistry. <i>Food and Function</i> , <b>2020</b> , 11, 7892-7904	6.1	10
8	Physico-chemistry of (1,3)- $\beta$ -Glucans <b>2009</b> , 47-118		9
7	Effect of surfactant treatment on swelling behaviour of normal and waxy cereal starches. <i>Carbohydrate Polymers</i> , <b>2015</b> , 125, 265-71	10.3	6
6	Functional Genomic Validation of the Roles of in Rice Endosperm. <i>Frontiers in Genetics</i> , <b>2020</b> , 11, 289	4.5	6
5	Starch NMR <b>2014</b> , 243-253		6
4	Characterisation Techniques in Food Materials Science <b>2012</b> , 52-93		4
3	Wheat cell walls and constituent polysaccharides induce similar microbiota profiles upon fermentation despite different short chain fatty acid end-product levels. <i>Food and Function</i> , <b>2021</b> , 12, 1135-1146	6.1	3
2	Pasting properties of high-amylose wheat in conventional and high-temperature Rapid Visco Analyzer: Molecular contribution of starch and gluten proteins. <i>Food Hydrocolloids</i> , <b>2022</b> , 131, 107840	10.6	0
1	Thermal properties of polysaccharides at low moisture: Part 3 Comparative behaviour of guar gum and dextran <b>1998</b> , 179-190		