

# Robert M Briber

## List of Publications by Year in descending order

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138  
papers

5,415  
citations

76196

40  
h-index

88477

70  
g-index

139  
all docs

139  
docs citations

139  
times ranked

5344  
citing authors

#	ARTICLE	IF	CITATIONS
1	Flame retardant mechanism of polyamide 6â€“clay nanocomposites. <i>Polymer</i> , 2004, 45, 881-891.	1.8	422
2	Cellulose ionic conductors with high differential thermal voltage for low-grade heat harvesting. <i>Nature Materials</i> , 2019, 18, 608-613.	13.3	343
3	Copper-coordinated cellulose ion conductors for solid-state batteries. <i>Nature</i> , 2021, 598, 590-596.	13.7	262
4	Chain conformation in ultrathin polymer films. <i>Nature</i> , 1999, 400, 146-149.	13.7	261
5	Superabsorbent Hydrogels That Are Robust and Highly Stretchable. <i>Macromolecules</i> , 2014, 47, 4445-4452.	2.2	181
6	Molecular Crowding Stabilizes Folded RNA Structure by the Excluded Volume Effect. <i>Journal of the American Chemical Society</i> , 2010, 132, 8690-8696.	6.6	178
7	The phase diagram and morphology of blends of poly(vinylidene fluoride) and poly(ethyl acrylate). <i>Polymer</i> , 1987, 28, 38-46.	1.8	169
8	A nanofluidic ion regulation membrane with aligned cellulose nanofibers. <i>Science Advances</i> , 2019, 5, eaau4238.	4.7	148
9	Self-Assembled SERS Substrates with Tunable Surface Plasmon Resonances. <i>Advanced Functional Materials</i> , 2011, 21, 3424-3429.	7.8	146
10	Sustainable high-strength macrofibres extracted from natural bamboo. <i>Nature Sustainability</i> , 2022, 5, 235-244.	11.5	113
11	Characterization of Organically Modified Clays Using Scattering and Microscopy Techniques. <i>Chemistry of Materials</i> , 2001, 13, 1923-1931.	3.2	110
12	Chain Conformation in Ultrathin Polymer Films Using Small-Angle Neutron Scattering. <i>Macromolecules</i> , 2001, 34, 559-567.	2.2	105
13	Dynamic Transition in tRNA is Solvent Induced. <i>Journal of the American Chemical Society</i> , 2006, 128, 32-33.	6.6	105
14	Morphology control and interfacial reinforcement in reactive polystyrene/amorphous polyamide blends. <i>Polymer</i> , 1996, 37, 3509-3519.	1.8	104
15	Dynamics of Biological Macromolecules: Not a Simple Slaving by Hydration Water. <i>Biophysical Journal</i> , 2010, 98, 1321-1326.	0.2	103
16	Investigation of two crystal forms in MDI/BDO-based polyurethanes. <i>Journal of Macromolecular Science - Physics</i> , 1983, 22, 509-528.	0.4	88
17	Cooperative Tertiary Interaction Network Guides RNA Folding. <i>Cell</i> , 2012, 149, 348-357.	13.5	88
18	Metal Ion Dependence of Cooperative Collapse Transitions in RNA. <i>Journal of Molecular Biology</i> , 2009, 393, 753-764.	2.0	86

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19	Persistence Length Changes Dramatically as RNA Folds. <i>Physical Review Letters</i> , 2005, 95, 268303.	2.9	81
20	Dynamics of tRNA at Different Levels of Hydration. <i>Biophysical Journal</i> , 2009, 96, 2755-2762.	0.2	81
21	Nanoporous Polyimides. <i>Advances in Polymer Science</i> , 1999, , 1-43.	0.4	80
22	Morphological study of the structure developed during the polymerization of a series of segmented polyurethanes. <i>Polymer</i> , 1982, 23, 1060-1068.	1.8	75
23	Structure and morphology of segmented polyurethanes: 2. Influence of reactant incompatibility. <i>Polymer</i> , 1983, 24, 1333-1340.	1.8	71
24	Silk-like elastinlike protein polymer hydrogels: Influence of monomer sequence on physicochemical properties. <i>Polymer</i> , 2009, 50, 366-374.	1.8	69
25	Effect of crosslinks on the phase separation behavior of a miscible polymer blend. <i>Macromolecules</i> , 1988, 21, 3296-3303.	2.2	67
26	RNA Tertiary Interactions Mediate Native Collapse of a Bacterial Group I Ribozyme. <i>Journal of Molecular Biology</i> , 2005, 353, 1199-1209.	2.0	66
27	Crystallization behaviour of random block copolymers of poly(butylene terephthalate) and poly(tetramethylene ether glycol). <i>Polymer</i> , 1985, 26, 8-16.	1.8	65
28	Residence-time distribution model for twin-screw extruders. <i>AIChE Journal</i> , 1999, 45, 2541-2549.	1.8	65
29	Compaction of a Bacterial Group I Ribozyme Coincides with the Assembly of Core Helices. <i>Biochemistry</i> , 2004, 43, 1746-1753.	1.2	58
30	Small-angle neutron scattering studies of compatible blends of linear poly(vinyl methyl ether) and cross-linked deuterated polystyrene. <i>Macromolecules</i> , 1989, 22, 940-948.	2.2	56
31	The morphology of poly(vinylidene fluoride) crystallized from blends of poly(vinylidene fluoride) and poly(ethyl acrylate). <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1993, 31, 1253-1272.	2.4	55
32	Morphotropic Phase Boundaries in Ferromagnets: $\chi \propto T^{\beta} \ln T$ Physical Review Letters, 2013, 111, 017203.	2.9	53
33	Self-assembled block copolymer photonic crystal for selective fructose detection. <i>Biosensors and Bioelectronics</i> , 2013, 46, 124-129.	5.3	51
34	Multistage Collapse of a Bacterial Ribozyme Observed by Time-Resolved Small-Angle X-ray Scattering. <i>Journal of the American Chemical Society</i> , 2010, 132, 10148-10154.	6.6	50
35	A high-performance hydroxide exchange membrane enabled by Cu <sup>2+</sup> -crosslinked chitosan. <i>Nature Nanotechnology</i> , 2022, 17, 629-636.	15.6	50
36	The structure of MDI/BDO-based polyurethanes: Diffraction studies on model compounds and oriented thin films. <i>Journal of Polymer Science, Polymer Physics Edition</i> , 1985, 23, 1915-1932.	1.0	49

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37	Crowders Perturb the Entropy of RNA Energy Landscapes to Favor Folding. <i>Journal of the American Chemical Society</i> , 2013, 135, 10055-10063.	6.6	49
38	Environment-Controlled Spin Coating To Rapidly Orient Microdomains in Thin Block Copolymer Films. <i>Macromolecules</i> , 2007, 40, 4102-4105.	2.2	47
39	Neutron scattering in the biological sciences: progress and prospects. <i>Acta Crystallographica Section D: Structural Biology</i> , 2018, 74, 1129-1168.	1.1	47
40	Decoupling Ionic and Electronic Pathways in Low-Dimensional Hybrid Conductors. <i>Journal of the American Chemical Society</i> , 2019, 141, 17830-17837.	6.6	42
41	Mean residence time analysis for twin screw extruders. <i>Polymer Engineering and Science</i> , 2000, 40, 227-237.	1.5	41
42	The hard segment unit cell for MDI-BDO-based polyurethane elastomers. <i>Polymer</i> , 1990, 31, 1003-1008.	1.8	35
43	Immiscibility in polystyrene/sulfonated polystyrene blends. <i>Polymer</i> , 1995, 36, 1969-1973.	1.8	34
44	Reactive Reinforcement of Polystyrene/Poly(2-vinylpyridine) Interfaces. <i>Macromolecules</i> , 1996, 29, 4969-4975.	2.2	32
45	Phase Separation and Stack Alignment in Aqueous Cellulose Nanocrystal Suspension under Weak Magnetic Field. <i>Langmuir</i> , 2018, 34, 8042-8051.	1.6	32
46	Small angle neutron scattering from polymer blends in the dilute concentration limit. <i>Journal of Chemical Physics</i> , 1994, 101, 2592-2599.	1.2	27
47	Small-angle neutron scattering of blends of crosslinked and linear polystyrene. <i>Macromolecules</i> , 1991, 24, 1899-1904.	2.2	26
48	Small angle neutron scattering from deuterated polystyrene/poly(vinylmethyl ether)/protonated polystyrene ternary polymer blends. <i>Polymer</i> , 1992, 33, 1785-1787.	1.8	26
49	The Collapse of Free Polymer Chains in a Network. <i>Science</i> , 1995, 268, 395-397.	6.0	26
50	A simple method for creating nanoporous block-copolymer thin films. <i>Polymer</i> , 2010, 51, 2376-2382.	1.8	26
51	The Dynamics of Unfolded versus Folded tRNA: The Role of Electrostatic Interactions. <i>Journal of the American Chemical Society</i> , 2011, 133, 16406-16409.	6.6	25
52	The crystal habit and morphology of polybutylene terephthalate and related copolymers. <i>Polymer</i> , 1986, 27, 66-70.	1.8	24
53	Small-Angle Neutron Scattering of Solutions of Arborescent Graft Polystyrenes. <i>Macromolecules</i> , 1999, 32, 7879-7886.	2.2	24
54	Microstructure of high modulus solid state extruded polyethylene: 2. X-ray scattering studies of 12, 24 and 36 extrusion draw ratio. <i>Polymer</i> , 1985, 26, 17-26.	1.8	23

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55	Molecular crowding overcomes the destabilizing effects of mutations in a bacterial ribozyme. <i>Nucleic Acids Research</i> , 2015, 43, 1170-1176.	6.5	23
56	Structural and magnetic characterization of norbornene- $\epsilon$ -deuterated norbornene dicarboxylic acid diblock copolymers doped with iron oxide nanoparticles. <i>Polymer</i> , 2005, 46, 5194-5201.	1.8	21
57	Templating Organosilicate Vitrification Using Unimolecular Self-Organizing Polymers: Evolution of Morphology and Nanoporosity Development with Network Formation. <i>Advanced Materials</i> , 2005, 17, 1031-1035.	11.1	21
58	Conformation of Arborescent Polymers in Solution by Small-Angle Neutron Scattering: $\epsilon$ Segment Density and Core-Shell Morphology. <i>Macromolecules</i> , 2008, 41, 175-183.	2.2	21
59	A SANS Study of the Conformational Behavior of Linear Chains in Compressed and Uncompressed End-Linked Elastomers. <i>Macromolecules</i> , 2001, 34, 7773-7782.	2.2	20
60	Neutron Reflectivity on Nanoporous Poly(Methylsilsequioxane) Thin Films. <i>Chemistry of Materials</i> , 2003, 15, 609-611.	3.2	20
61	Internal magnetic structure of dextran coated magnetite nanoparticles in solution using small angle neutron scattering with polarization analysis. <i>Journal of Applied Physics</i> , 2011, 109, 07B513.	1.1	19
62	Hexagonally ordered nanoparticles templated using a block copolymer film through Coulombic interactions. <i>Nanotechnology</i> , 2013, 24, 045305.	1.3	19
63	Effect of crosslinks on the miscibility of a deuterated polybutadiene and protonated polybutadiene blend. <i>Macromolecules</i> , 1993, 26, 182-188.	2.2	18
64	Diffusion of linear deuterated polystyrene chains in crosslinked polystyrene networks. <i>Macromolecules</i> , 1993, 26, 6431-6435.	2.2	18
65	Color changing block copolymer films for chemical sensing of simple sugars. <i>Biosensors and Bioelectronics</i> , 2011, 28, 349-354.	5.3	18
66	Entropic stabilization of folded RNA in crowded solutions measured by SAXS. <i>Nucleic Acids Research</i> , 2016, 44, gkw597.	6.5	18
67	Phase separation behavior in blends of poly(benzimidazole) and poly(ether imide). <i>Macromolecules</i> , 1992, 25, 4734-4743.	2.2	17
68	Small-Angle Neutron Scattering Studies on Thin Films of Isotopic Polystyrene Blends. <i>Macromolecules</i> , 1998, 31, 9247-9252.	2.2	17
69	Diblock copolymer based self-assembled nanomagnetoelectric. <i>Applied Physics Letters</i> , 2008, 93, 173507.	1.5	17
70	Synergistically Tailoring Mechanical and Optical Properties of Diblock Copolymer Thermoplastic Elastomers via Lanthanide Coordination. <i>Chemistry of Materials</i> , 2022, 34, 1578-1589.	3.2	17
71	Fracture toughness of discontinuously reinforced Al-4Cu-1.5Mg/TiB <sub>2</sub> composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1994, 25, 2461-2467.	1.1	16
72	Supramolecular luminescent triblock copolymer thermoplastic elastomer via metal-ligand coordination. <i>Polymer Testing</i> , 2019, 78, 105956.	2.3	16

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73	Small-Angle Neutron Scattering of Blends of Arborescent Polystyrenes. <i>Macromolecules</i> , 2000, 33, 6495-6501.	2.2	15
74	Thin-film transformations and volatile products in the formation of nanoporous low-k polymethylsilsesquioxane-based dielectric. <i>Journal of Vacuum Science &amp; Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2005, 23, 908.	1.6	15
75	Conformation of Free Linear Polymer Chains in a Polymer Network. <i>Macromolecules</i> , 1997, 30, 4704-4712.	2.2	14
76	Transmission electron microscopy of 3F/PMDA-polypropylene oxide triblock copolymer based nanofoams. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1997, 35, 1067-1076.	2.4	14
77	Small-angle neutron scattering of polymer blends of polyvinylmethylether at dilute concentration in deuterated polystyrene. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1998, 36, 1-9.	2.4	13
78	TEM characterization of diblock copolymer templated iron oxide nanoparticles: Bulk solution and thin film surface doping approach. <i>Polymer</i> , 2006, 47, 2018-2022.	1.8	13
79	Silicon Patterning Using Self-assembled PS-b-PAA Diblock Copolymer Masks for Black Silicon Fabrication via Plasma Etching. <i>Plasma Processes and Polymers</i> , 2012, 9, 968-974.	1.6	12
80	Extended delivery of cationic drugs from contact lenses loaded with unsaturated fatty acids. <i>European Journal of Pharmaceutics and Biopharmaceutics</i> , 2020, 155, 1-11.	2.0	12
81	Electron energy loss spectroscopy: Application to synthetic organic polymers. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1988, 26, 621-636.	2.4	11
82	Non-uniform composition profiles in thin film polymeric nanofoams. <i>Polymer</i> , 1999, 40, 2547-2553.	1.8	11
83	Small-angle neutron scattering of arborescent polystyrene-graft-poly(2-vinylpyridine) copolymers. <i>Polymer</i> , 2003, 44, 6579-6587.	1.8	11
84	Phase Behavior of Ultrathin Polymer Mixtures. <i>Macromolecules</i> , 2004, 37, 6676-6679.	2.2	11
85	Dilute-solution structure of charged arborescent graft polymer. <i>Polymer</i> , 2006, 47, 2750-2759.	1.8	11
86	NMR water self-diffusion and relaxation studies on sodium polyacrylate solutions and gels in physiologic ionic solutions. <i>Journal of Applied Polymer Science</i> , 2014, 131, .	1.3	10
87	Spray-Processed Composites with High Conductivity and Elasticity. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 13953-13962.	4.0	10
88	Amorphous cellulose thin films. <i>Cellulose</i> , 2020, 27, 2959-2965.	2.4	10
89	Grafted Interpenetrating Polymer Networks. <i>Advances in Chemistry Series</i> , 1994, , 179-195.	0.6	9
90	Mechanical properties of polyurethane film exposed to solutions of nonoxynol-9 surfactant and poly(ethylene glycol). <i>Journal of Applied Polymer Science</i> , 2004, 91, 1086-1096.	1.3	9

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91	Formation of Drug-Participating Catanionic Aggregates for Extended Delivery of Non-Steroidal Anti-Inflammatory Drugs from Contact Lenses. <i>Biomolecules</i> , 2019, 9, 593.	1.8	9
92	Oligocellulose from acid hydrolysis: A revisit. <i>Applied Surface Science</i> , 2021, 537, 147783.	3.1	9
93	Efficient production of oligomeric chitin with narrow distributions of degree of polymerization using sonication-assisted phosphoric acid hydrolysis. <i>Carbohydrate Polymers</i> , 2022, 276, 118736.	5.1	9
94	Poly(2-vinylnaphthalene)- <i>block</i> -poly(acrylic acid) Block Copolymer: Self-Assembled Pattern Formation, Alignment, and Transfer into Silicon via Plasma Etching. <i>Macromolecular Chemistry and Physics</i> , 2011, 212, 1735-1741.	1.1	8
95	ToF-SIMS studies of nanoporous PMSSQ materials: kinetics and reactions in the processing of low-K dielectrics for ULSI applications. <i>Surface and Interface Analysis</i> , 2004, 36, 304-310.	0.8	7
96	Self-organized two-dimensional onions. <i>Applied Physics Letters</i> , 2009, 94, 113507.	1.5	7
97	Collapse of a Polymer in a Polymeric Solvent. <i>Macromolecules</i> , 1995, 28, 4020-4022.	2.2	6
98	Neutron Scattering Study of Chain Conformations in the Energetically Neutral Pores of Vycor Glass. <i>Macromolecules</i> , 2002, 35, 6384-6391.	2.2	6
99	Influence of organic liquids on the nanostructure of precipitated cellulose. <i>Journal of Applied Polymer Science</i> , 2013, 127, 2620-2627.	1.3	6
100	Electron beam crosslinking of poly(vinylmethyl ether). <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1994, 32, 811-815.	2.4	5
101	Polystyrene Network~Network Interdiffusion. <i>Macromolecules</i> , 2002, 35, 6638-6644.	2.2	5
102	Preparation of polymer crystal nuclei. <i>Journal of Polymer Science, Part C: Polymer Letters</i> , 1989, 27, 489-496.	0.7	4
103	Polymer blends, copolymers and networks. Scattering properties and phase behavior. <i>Macromolecular Theory and Simulations</i> , 1997, 6, 197-235.	0.6	4
104	Small angle neutron scattering study of deuterated sodium dodecylsulfate micellization in dilute poly((2-dimethylamino)ethyl methacrylate) solutions. <i>Polymer</i> , 2010, 51, 2872-2878.	1.8	4
105	Molecular partitioning in ternary solutions of cellulose. <i>Carbohydrate Polymers</i> , 2019, 220, 157-162.	5.1	4
106	Solvent-Assisted Fractionation of Oligomeric Cellulose and Reversible Transformation of Cellulose II and IV. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 4792-4797.	2.6	4
107	Interfacial fracture toughness between glassy polymer networks. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2003, 41, 1902-1908.	2.4	3
108	Oxidation effect on templating of metal oxide nanoparticles within block copolymers. <i>Polymer</i> , 2009, 50, 1223-1227.	1.8	3

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109	Kinetics and Mechanism of RNA Folding studied by SAXS. Biophysical Journal, 2009, 96, 575a.	0.2	3
110	Structure investigation of poly((2-dimethylamino)ethyl methacrylate)/sodium dodecylsulfate complexes in concentrated poly((2-dimethylamino)ethyl methacrylate) solutions using small angle neutron scattering. Polymer, 2012, 53, 2942-2948.	1.8	3
111	Effect of Carbon Chain Length, Ionic Strength, and pH on the In Vitro Release Kinetics of Cationic Drugs from Fatty-Acid-Loaded Contact Lenses. Pharmaceutics, 2021, 13, 1060.	2.0	3
112	Using block copolymer self-assembly to imprint the crystallization of polymer dendrites. Soft Matter, 2011, 7, 8969.	1.2	2
113	A flexible mesofiber-based fast current collector. Journal of Materials Science, 2020, 55, 11391-11402.	1.7	2
114	Cellulose Nanocomposites of Cellulose Nanofibers and Molecular Coils. Journal of Composites Science, 2021, 5, 200.	1.4	2
115	Remote Chemical Sensing by SERS with Self-Assembly Plasmonic Nanoparticle Arrays on a Fiber. Frontiers in Physics, 2022, 9, .	1.0	2
116	Small Angle Neutron Scattering Studies of Blends of Protonated Linear Polystyrene with Crosslinked Deuterated Polystyrene. Materials Research Society Symposia Proceedings, 1989, 171, 203.	0.1	1
117	Small Angle Neutron Scattering Studies of Single Phase IPNs. Materials Research Society Symposia Proceedings, 1992, 274, 59.	0.1	1
118	Characterization of thin Polymeric Nanofoam films by Transmission Electron Microscopy and Small Angle Neutron Scattering. Materials Research Society Symposia Proceedings, 1996, 461, 103.	0.1	1
119	Studies of Organically Modified Clays by Scattering Techniques. ACS Symposium Series, 2001, , 127-140.	0.5	1
120	Effect of random and block copolymer additives on a homopolymer blend studied by small-angle neutron scattering. Journal of Polymer Science, Part B: Polymer Physics, 2004, 42, 3191-3203.	2.4	1
121	Survey reveals interdisciplinarity of MSE faculty. MRS Bulletin, 2012, 37, 541-542.	1.7	1
122	Effects of Preferential Counterion Interactions on the Specificity of RNA Folding. Journal of Physical Chemistry Letters, 2018, 9, 5726-5732.	2.1	1
123	Small-angle neutron scattering of polymer blends of polyvinylmethylether at dilute concentration in deuterated polystyrene. , 1998, 36, 1.		1
124	Collapse of Isolated Chains in a Network. Materials Research Society Symposia Proceedings, 1994, 376, 271.	0.1	0
125	Radius of Gyration Scaling in the Semidilute Regime. Materials Research Society Symposia Proceedings, 1994, 376, 291.	0.1	0
126	Shear effect on the devolatilization of filled polymers. Journal of Vinyl and Additive Technology, 1998, 4, 45-49.	1.8	0



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127	Slip Flow in Partially Filled Screw Channel. Journal of Reinforced Plastics and Composites, 1998, 17, 712-724.	1.6	0
128	Material Characterization and the Formation of Nanoporous PMSSQ Low-K Dielectrics. AIP Conference Proceedings, 2003, , .	0.3	0
129	Folding of Bacterial Group I Ribozyme in Crowded Solutions. Biophysical Journal, 2010, 98, 472a.	0.2	0
130	Time-Resolved Multiphase Folding of Bacterial Group I Ribozyme. Biophysical Journal, 2010, 98, 472a.	0.2	0
131	The Role of Electrostatic Relaxation on the Folding Kinetics of a Bacterial Ribozyme. Biophysical Journal, 2011, 100, 236a.	0.2	0
132	Tertiary Interactions Maintain the Balance of Stability, Folding Efficiency and Speed in a Large Catalytic Bacterial RNA. Biophysical Journal, 2011, 100, 236a.	0.2	0
133	Exploring the Folding Landscape of RNA in Crowded Solutions. Biophysical Journal, 2011, 100, 236a.	0.2	0
134	RNA Flexibility and Folding in Crowded Solutions. Biophysical Journal, 2012, 102, 644a.	0.2	0
135	RNA Folding in Crowded Solutions. Biophysical Journal, 2012, 102, 3a-4a.	0.2	0
136	High-throughput nanostructured SERS substrates by self-assembly. , 2012, , .		0
137	Materials science and engineering graduate core courses in the United States. MRS Bulletin, 2019, 44, 7-9.	1.7	0
138	Electron microscopy of polymer blends. Proceedings Annual Meeting Electron Microscopy Society of America, 1987, 45, 506-509.	0.0	0