Anthony J Kenyon

List of Publications by Year
in descending order

152 papers	5,810 citations	101543 36 h-index	79698 73 g-index
156 all docs	156 docs citations	156 times ranked	5739 citing authors

#	Article	IF	Citations
1	Probing Electrochemistry at the Nanoscale: In Situ TEM and STM Characterizations of Conducting Filaments in Memristive Devices. Kluwer International Series in Electronic Materials: Science and Technology, 2022, , 87-120.	0.5	0
2	Brain-inspired computing needs a master plan. Nature, 2022, 604, 255-260.	27.8	147
3	Nonidealityâ€Aware Training for Accurate and Robust Lowâ€Power Memristive Neural Networks. Advanced Science, 2022, 9, e2105784.	11.2	17
4	Engineering Silicon Oxide by Argon Ion Implantation for High Performance Resistance Switching. Frontiers in Materials, 2022, 9, .	2.4	1
5	Mitigating Non-idealities of Memristive-based Artificial Neural Networks - an Algorithmic Approach. , 2022, , .		2
6	Memristive, Spintronic, and 2Dâ€Materialsâ€Based Devices to Improve and Complement Computing Hardware. Advanced Intelligent Systems, 2022, 4, .	6.1	13
7	Substitutional Tin Acceptor States in Black Phosphorus. Journal of Physical Chemistry C, 2021, 125, 22883-22889.	3.1	5
8	Standards for the Characterization of Endurance in Resistive Switching Devices. ACS Nano, 2021, 15, 17214-17231.	14.6	128
9	A nanoscale analysis method to reveal oxygen exchange between environment, oxide, and electrodes in ReRAM devices. APL Materials, 2021, 9, .	5.1	6
10	Neuromorphic Dynamics at the Nanoscale in Silicon Suboxide RRAM. Frontiers in Nanotechnology, 2021, 3, .	4.8	3
11	The nature of column boundaries in micro-structured silicon oxide nanolayers. APL Materials, 2021, 9, 121107.	5.1	2
12	Memristorsâ€”From Inâ€Memory Computing, Deep Learning Acceleration, and Spiking Neural Networks to the Future of Neuromorphic and Bioâ€Inspired Computing. Advanced Intelligent Systems, 2020, 2, 2000085.	6.1	143
13	Committee machinesâ€”a universal method to deal with non-idealities in memristor-based neural networks. Nature Communications, 2020, 11, 4273.	12.8	51
14	Complementary Metalâ€Oxide Semiconductor and Memristive Hardware for Neuromorphic Computing. Advanced Intelligent Systems, 2020, 2, 1900189.	6.1	78
15	Memristor-Based Edge Detection for Spike Encoded Pixels. Frontiers in Neuroscience, 2020, 13, 1386.	2.8	14
16	The interplay between structure and function in redox-based resistance switching. Faraday Discussions, 2019, 213, 151-163.	3.2	16
17	Simulation of Inference Accuracy Using Realistic RRAM Devices. Frontiers in Neuroscience, 2019, 13, 593.	2.8	52
18	Improving the Consistency of Nanoscale Etching for Atomic Force Microscopy Tomography Applications. Frontiers in Materials, 2019, 6, .	2.4	5

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19	Synaptic and neuromorphic functions: general discussion. Faraday Discussions, 2019, 213, 553-578.	3.2	2
20	Valence change ReRAMs (VCM) - Experiments and modelling: general discussion. Faraday Discussions, 2019, 213, 259-286.	3.2	2
21	Electrochemical metallization ReRAMs (ECM) - Experiments and modelling: general discussion. Faraday Discussions, 2019, 213, 115-150.	3.2	5
22	An oxygen vacancy mediated Ag reduction and nucleation mechanism in SiO2 RRAM devices. Microelectronics Reliability, 2019, 98, 144-152.	1.7	16
23	Sensing and Discrimination of Explosives at Variable Concentrations with a Large-Pore MOF as Part of a Luminescent Array. ACS Applied Materials & Interfaces, 2019, 11, 11618-11626.	8.0	54
24	Recommended Methods to Study Resistive Switching Devices. Advanced Electronic Materials, 2019, 5, 1800143.	5.1	452
25	High-Performance Resistance Switching Memory Devices Using Spin-On Silicon Oxide. IEEE Nanotechnology Magazine, 2018, 17, 884-888.	2.0	11
26	Controlling and modelling the wetting properties of III-V semiconductor surfaces using re-entrant nanostructures. Scientific Reports, 2018, 8, 3544.	3.3	4
27	Investigation of resistance switching in SiO_xRRAM cells using a 3D multi-scale kinetic Monte Carlo simulator. Journal of Physics Condensed Matter, 2018, 30, 084005.	1.8	23
28	On the Limits of Scalpel AFM for the 3D Electrical Characterization of Nanomaterials. Advanced Functional Materials, 2018, 28, 1802266.	14.9	19
29	Simulation of Cycle-to-Cycle Instabilities in SiOx- Based ReRAM Devices Using a Self-Correlated Process with Long-Term Variation. IEEE Electron Device Letters, 2018, , 1-1.	3.9	7
30	Theoretical Study of Ag Interactions in Amorphous Silica RRAM Devices. , 2018, , .		1
31	Silicon Oxide (SiO_x): A Promising Material for Resistance Switching?. Advanced Materials, 2018, 30, e1801187.	21.0	156
32	Spike-Timing Dependent Plasticity in Unipolar Silicon Oxide RRAM Devices. Frontiers in Neuroscience, 2018, 12, 57.	2.8	24
33	On the ability of FÃ¶rster resonance energy transfer to enhance luminescent solar concentrator efficiency. Nano Energy, 2017, 32, 263-270.	16.0	60
34	Probing electrochemistry at the nanoscale: in situ TEM and STM characterizations of conducting filaments in memristive devices. Journal of Electroceramics, 2017, 39, 73-93.	2.0	28
35	Intrinsic resistance switching in amorphous silicon oxide for high performance SiOx ReRAM devices. Microelectronic Engineering, 2017, 178, 98-103.	2.4	64
36	Intrinsic Resistance Switching in Amorphous Silicon Suboxides: The Role of Columnar Microstructure. Scientific Reports, 2017, 7, 9274.	3.3	41

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37	Light-activated resistance switching in SiOx RRAM devices. Applied Physics Letters, 2017, 111, .	3.3	47
38	Emulating the Electrical Activity of the Neuron Using a Silicon Oxide RRAM Cell. Frontiers in Neuroscience, 2016, 10, 57.	2.8	106
39	Nanoscale Transformations in Metastable, Amorphous, Siliconâ€Rich Silica. Advanced Materials, 2016, 28, 7486-7493.	21.0	52
40	In situ transmission electron microscopy of resistive switching in thin silicon oxide layers. Resolution and Discovery, 2016, 1, 27-33.	0.4	16
41	Silica: Nanoscale Transformations in Metastable, Amorphous, Siliconâ€Rich Silica (Adv. Mater. 34/2016). Advanced Materials, 2016, 28, 7549-7549.	21.0	13
42	Conductive AFM Topography of Intrinsic Conductivity Variations in Silica Based Dielectrics for Memory Applications. ECS Transactions, 2016, 75, 3-9.	0.5	7
43	Resistance Switching in Individual Hydrogen Silsesquioxane (HSQ) Nanopillars. ECS Transactions, 2016, 75, 101-105.	0.5	1
44	X-ray spectromicroscopy investigation of soft and hard breakdown in RRAM devices. Nanotechnology, 2016, 27, 345705.	2.6	11
45	Advanced physical modeling of SiO<inf>x</inf> resistive random access memories. , 2016, , .		6
46	Electrospray synthesis and properties of hierarchically structured PLGA TIPS microspheres for use as controlled release technologies. Journal of Colloid and Interface Science, 2016, 467, 220-229.	9.4	46
47	Flexible and fluorophore-doped luminescent solar concentrators based on polydimethylsiloxane. Optics Letters, 2016, 41, 713.	3.3	27
48	Nanosecond Analog Programming of Substoichiometric Silicon Oxide Resistive RAM. IEEE Nanotechnology Magazine, 2016, 15, 428-434.	2.0	13
49	Losses in luminescent solar concentrators unveiled. Solar Energy Materials and Solar Cells, 2016, 144, 40-47.	6.2	82
50	Doping Group IIB Metal Ions into Quantum Dot Shells via the Oneâ€Pot Decomposition of Metalâ€Dithiocarbamates. Advanced Optical Materials, 2015, 3, 704-712.	7.3	19
51	Modeling of Quantized Conductance Effects in Electrochemical Metallization Cells. IEEE Nanotechnology Magazine, 2015, 14, 505-512.	2.0	33
52	Structural changes and conductance thresholds in metal-free intrinsic SiOx resistive random access memory. Journal of Applied Physics, 2015, 117, .	2.5	102
53	Resistive Switching in Oxides. Springer Series in Surface Sciences, 2015, , 401-428.	0.3	16
54	Development of Indium Phosphide MEMS for tunable optical buffering. , 2015, , .		0

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55	Resistance switching in SiO_x. , 2015, , .		0
56	Design and fabrication of indium phosphide air-bridge waveguides with MEMS functionality. Proceedings of SPIE, 2015, , .	0.8	0
57	Electrospun fabrication of one-dimensional composite nanofibres using colloidal gold/polymer aqueous blends. , 2015, , .		0
58	Structural investigation of resistance switching in silicon-rich silica films. , 2015, , .		0
59	The vapour phase detection of explosive markers and derivatives using two fluorescent metalâ€“organic frameworks. Journal of Materials Chemistry A, 2015, 3, 6351-6359.	10.3	69
60	Microscopic and spectroscopic analysis of the nature of conductivity changes during resistive switching in siliconâ€rich silicon oxide. Physica Status Solidi C: Current Topics in Solid State Physics, 2015, 12, 211-217.	0.8	21
61	Multiple Diode-Like Conduction in Resistive Switching SiO<italic>_x</italic>-Based MIM Devices. IEEE Nanotechnology Magazine, 2015, 14, 15-17.	2.0	7
62	Tunable optical buffer based on III-V MEMS design. , 2015, , .		0
63	Design and Fabrication of Suspended Indium Phosphide Waveguides for MEMS-Actuated Optical Buffering. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 240-246.	2.9	7
64	Conductance tomography of conductive filaments in intrinsic silicon-rich silica RRAM. Nanoscale, 2015, 7, 18030-18035.	5.6	62
65	Homeotropic alignment and FÃ¶rster resonance energy transfer: The way to a brighter luminescent solar concentrator. Journal of Applied Physics, 2014, 116, 173103.	2.5	31
66	MEMS actuation for a continuously tunable optical buffer. , 2014, , .		1
67	Design and fabrication of InP free-standing optical waveguides for MEMS. , 2014, , .		1
68	The interaction of gold and silver nanoparticles with a range of anionic and cationic dyes. Physical Chemistry Chemical Physics, 2014, 16, 6050-6059.	2.8	37
69	Modification of erbium photoluminescence decay rate due to ITO layers on thin films of SiO2:Er doped with Si-nanoclusters. Journal of Luminescence, 2013, 136, 407-410.	3.1	7
70	Donor ionization in size controlled silicon nanocrystals: The transition from defect passivation to free electron generation. Journal of Applied Physics, 2013, 113, 024304.	2.5	10
71	Size limit on the phosphorous doped silicon nanocrystals for dopant activation. Nuclear Instruments & Methods in Physics Research B, 2013, 307, 456-458.	1.4	5
72	Time-correlated single-photon counting study of multiple photoluminescence lifetime components of silicon nanoclusters. Journal of Luminescence, 2013, 136, 57-62.	3.1	4

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73	Self-assembly of metallic nanoparticles into one dimensional arrays. Journal of Materials Chemistry A, 2013, 1, 6985.	10.3	54
74	Efficiency and loss mechanisms of plasmonic Luminescent Solar Concentrators. Optics Express, 2013, 21, A735.	3.4	28
75	Multi-channel conduction in redox-based resistive switch modelled using quantum point contact theory. Applied Physics Letters, 2013, 103, .	3.3	19
76	Quantum Conductance in Silicon Oxide Resistive Memory Devices. Scientific Reports, 2013, 3, 2708.	3.3	144
77	(Invited) On the Origin of the Step-Like Quantum Yield of Si-Nanocrystals: MEG or Efficient Exciton Generation Via Critical Points in C-si. ECS Meeting Abstracts, 2013, , .	0.0	0
78	(Invited) Resistive Switching in Silicon Oxide Containing Silicon Nanoinclusions. ECS Meeting Abstracts, 2013, , .	0.0	0
79	Intrinsic Resistive Switching in Bulk SiOx Films. Materials Research Society Symposia Proceedings, 2012, 1430, 1.	0.1	0
80	Structural factors impacting carrier transport and electroluminescence from Si nanocluster-sensitized Er ions. Optics Express, 2012, 20, 22490.	3.4	15
81	Investigation of quartz grain surface textures by atomic force microscopy for forensic analysis. Forensic Science International, 2012, 223, 245-255.	2.2	21
82	Continuous hydrothermal synthesis of surface-functionalised nanophosphors for biological imaging. RSC Advances, 2012, 2, 10037.	3.6	12
83	Resistive switching in silicon suboxide films. Journal of Applied Physics, 2012, 111, .	2.5	217
84	Electrically tailored resistance switching in silicon oxide. Nanotechnology, 2012, 23, 455201.	2.6	96
85	Rate equation modelling of erbium luminescence dynamics in erbium-doped silicon-rich-silicon-oxide. Journal of Luminescence, 2012, 132, 3103-3112.	3.1	6
86	Selfâ€Assembled Ultraâ€High Aspect Ratio Silver Nanochains. Advanced Materials, 2012, 24, 5227-5235.	21.0	16
87	Electrically pumped silicon waveguide light sources. Optics Express, 2011, 19, 24569.	3.4	5
88	Probing the phonon confinement in ultrasmall silicon nanocrystals reveals a size-dependent surface energy. Journal of Applied Physics, 2011, 109, 083534.	2.5	45
89	Probing energy transfer in an ensemble of silicon nanocrystals. Journal of Applied Physics, 2011, 110, 033522.	2.5	14
90	(Invited) Novel Processing for Si-Nanocrystal Based Photonic Materials. ECS Transactions, 2010, 28, 3-13.	0.5	0

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91	Towards population inversion of electrically pumped Er ions sensitized by Si nanoclusters. Optics Express, 2010, 18, 2230.	3.4	77
92	Introducing scenario based learning: Experiences from an undergraduate electronic and electrical engineering course. , 2010, , .		8
93	Current transport and electroluminescence mechanisms in thin SiO2 films containing Si nanocluster-sensitized erbium ions. Journal of Applied Physics, 2009, 106, .	2.5	45
94	A Planar CMOS Field-Emission Vacuum Magnetic Sensor. IEEE Transactions on Electron Devices, 2009, 56, 692-695.	3.0	3
95	Time-resolved measurements of dislocation-related photoluminescence bands in silicon. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 1811-1816.	0.8	1
96	Modification of the Er3+ radiative lifetime from proximity to silicon nanoclusters in silicon-rich silicon oxide. Optics Express, 2009, 17, 906.	3.4	13
97	Study of the electroluminescence at 1.5 μm of SiO<inf>x</inf> :Er layers made by reactive magnetron sputtering. , 2009, , .		0
98	Silicon nanoclusters containing nitrogen and sensitization of erbium luminescence in SiOx:Er. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2008, 146, 175-178.	3.5	2
99	Retention of data in heat-damaged SIM cards and potential recovery methods. Forensic Science International, 2008, 177, 42-46.	2.2	5
100	Time-resolved measurements of dislocation-related photoluminescence bands in silicon. Semiconductor Science and Technology, 2008, 23, 025010.	2.0	4
101	Generalized rate-equation analysis of excitation exchange between silicon nanoclusters and erbium ions. Physical Review B, 2008, 77, .	3.2	26
102	Silicon nanocluster-sensitized emission from erbium: The role of stress in the formation of silicon nanoclusters. Journal of Applied Physics, 2008, 104, .	2.5	3
103	Excited state absorption in the Si nanocluster-Er material system. IEEE Photonics Technology Letters, 2006, 18, 289-291.	2.5	10
104	Sensitisation of erbium luminescence in erbium-implanted alumina. Optical Materials, 2006, 28, 655-659.	3.6	2
105	Rare earth doped photonic materials. Optical Materials, 2006, 28, v.	3.6	0
106	An analysis of erbium excited state absorption in silicon-rich silica. Journal of Luminescence, 2006, 121, 193-198.	3.1	16
107	Process harmonic pulling in RIE plasma-tool. Electronics Letters, 2006, 42, 120.	1.0	4
108	Er3+ excited state absorption and the low fraction of nanocluster-excitable Er3+ in SiOx. Applied Physics Letters, 2006, 89, 031116.	3.3	32

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109	Amorphous and nanocrystalline luminescent Si and Ge obtained via a solid-state chemical metathesis synthesis route. Journal of Solid State Chemistry, 2005, 178, 937-949.	2.9	51
110	â€˜It's Not for Lazy Students like Me â€¦'. International Journal of Electrical Engineering and Education, 2005, 42, 41-51.	0.8	9
111	Erbium in silicon. Semiconductor Science and Technology, 2005, 20, R65-R84.	2.0	238
112	A frequency domain measurement diagnostic technique for plasma-tools. Measurement Science and Technology, 2004, 15, 231-236.	2.6	6
113	Broadband sensitization of 1.53Î¼m Er3+ luminescence in erbium-implanted alumina. Applied Physics Letters, 2004, 85, 5200-5202.	3.3	10
114	FTIR and XPS investigation of Er-doped SiO2â€“TiO2 films. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2003, 105, 209-213.	3.5	70
115	The infra-red photoresponse of erbium-doped silicon nanocrystals. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2003, 105, 230-235.	3.5	3
116	Visible photoluminescence from nanocrystalline Ge grown at room temperature by photo-oxidation of SiGe using a 126 nm lamp. Applied Surface Science, 2003, 208-209, 364-368.	6.1	7
117	Quantum confinement in rare-earth doped semiconductor systems. Current Opinion in Solid State and Materials Science, 2003, 7, 143-149.	11.5	31
118	Harmonic monitoring of the switched silicon etched process. Journal Physics D: Applied Physics, 2003, 36, 2146-2151.	2.8	2
119	The origin of the 0.78 eV luminescence band in dislocated silicon. Journal of Physics Condensed Matter, 2003, 15, S2843-S2850.	1.8	21
120	A Silicon-Based Infra-Red Photodetector Exploiting Erbium-Doped Silicon Nanocrystals. Materials Research Society Symposia Proceedings, 2003, 770, 6111.	0.1	0
121	Increasing the efficiency of erbiumâ€“based sources using silicon quantum dots. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 345-362.	3.4	8
122	The Origin Of The 0.78 eV Luminescence Band In Strained Layer SiGe/Si. Materials Research Society Symposia Proceedings, 2003, 770, 511.	0.1	0
123	Luminescence from erbium-doped silicon nanocrystals in silica: Excitation mechanisms. Journal of Applied Physics, 2002, 91, 367.	2.5	162
124	Recent developments in rare-earth doped materials for optoelectronics. Progress in Quantum Electronics, 2002, 26, 225-284.	7.0	777
125	Enhancement of Er emission by coupling to silicon nanoclusters: a route to flashlamp-pumped Er amplifiers?. , 2001, , .		2
126	Investigation of energy exchange between silicon nanocrystals and Er3+ in silica. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2001, 81, 16-18.	3.5	9

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127	Broad-band and flashlamp pumping of 1.53 Î¼m emission from erbium-doped silicon nanocrystals. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2001, 81, 19-22.	3.5	8
128	Flashlamp pumping of erbium-doped silicon nanoclusters. Applied Organometallic Chemistry, 2001, 15, 352-358.	3.5	2
129	Rf probe technology for the next generation of technological plasmas. Journal Physics D: Applied Physics, 2001, 34, 2726-2733.	2.8	13
130	Photoluminescence characterization of Er3+ -implanted silica thin films containing Si nanocrystals. , 2000, , .		0
131	Remote-coupled sensing of plasma harmonics and process end-point detection. Vacuum, 2000, 57, 351-364.	3.5	18
132	Indirect excitation of 1.5 Î¼m emission from Er3+ in silicon-rich silica. Applied Physics Letters, 2000, 76, 688-690.	3.3	16
133	Evidence of energy coupling between Si nanocrystals and Er3+ in ion-implanted silica thin films. Applied Physics Letters, 1999, 75, 2011-2013.	3.3	135
134	A noninvasive rf probe for the study of ionization and dissociation processes in technological plasmas. Journal of Applied Physics, 1999, 86, 4100-4106.	2.5	6
135	Investigation of Coupling Mechanism between Erbium (Er3+) and Ytterbium (Yb3+) in Alumina (A12O3) Host. Materials Research Society Symposia Proceedings, 1999, 560, 203.	0.1	0
136	THE EFFECT OF LEVEL MIXING IN Er-DOPED Si. Materials Research Society Symposia Proceedings, 1999, 560, 251.	0.1	0
137	Energy Transfer in Erbium-Doped Silicon Nanoclusters: A Comparison of Silicon-Rich Silica and Silicon Nanopowders. Materials Research Society Symposia Proceedings, 1999, 560, 221.	0.1	0
138	Modeling the contribution of quantum confinement to luminescence from silicon nanoclusters. Journal of Applied Physics, 1998, 83, 3789-3794.	2.5	184
139	Luminescence efficiency measurements of silicon nanoclusters. Applied Physics Letters, 1998, 73, 523-525.	3.3	24
140	The origin of photoluminescence from thin films of siliconâ€rich silica. Journal of Applied Physics, 1996, 79, 9291-9300.	2.5	207
141	Silicon Nanoclusters In Silica: A Luminescence Study Of Visible Light Emission From A Siliconbased Material. Materials Research Society Symposia Proceedings, 1996, 424, 483.	0.1	0
142	Non-Destructive Assessment Of Semiconductor Carrier Lifetime Using Photothermal Radiometry. Materials Research Society Symposia Proceedings, 1996, 428, 455.	0.1	1
143	DC electroluminescence from PECVD grown thin films of silicon-rich silica. Electronics Letters, 1996, 32, 1703.	1.0	10
144	Thermo-acoustic effects on images for high resolution scanning acoustic microscopy. Electronics Letters, 1994, 30, 127-128.	1.0	0

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145	Optical properties of PECVD erbium-doped silicon-rich silica: evidence for energy transfer between silicon microclusters and erbium ions. Journal of Physics Condensed Matter, 1994, 6, L319-L324.	1.8	208
146	Thermal effects in scanning acoustic microscopy for fine resolution applications. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 1994, 41, 565-568.	3.0	3
147	Rare-Earth Doped Silicon-Rich Silica: Evidence for Energy Transfer between Silicon Microclusters and Rare-Earth Ions. Materials Research Society Symposia Proceedings, 1994, 358, 117.	0.1	3
148	Dynamics of the gas/liquid interface from laser molecular beam scattering. Faraday Discussions, 1993, 96, 245.	3.2	17
149	Investigation of dynamical processes at liquid surfaces by molecular scattering. Journal of the Chemical Society, Faraday Transactions, 1993, 89, 3877.	1.7	26
150	Liquid surface dynamics: a quantum-resolved scattering study. Chemical Physics Letters, 1992, 190, 55-58.	2.6	28
151	A study of molecular dynamics within liquid flows using fluorescence depolarization. Molecular Physics, 1991, 74, 871-884.	1.7	14
152	Fluorescence depolarization as a probe of molecular dynamics within liquid jets. Molecular Physics, 1991, 72, 965-970.	1.7	16