

Mark D Lumsden

List of Publications by Year in descending order

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135
papers

8,300
citations

61857

43
h-index

46693

89
g-index

138
all docs

138
docs citations

138
times ranked

6811
citing authors

#	ARTICLE	IF	CITATIONS
1	Proximate Kitaev quantum spin liquid behaviour in a honeycomb magnet. Nature Materials, 2016, 15, 733-740.	13.3	762
2	Giant anharmonic phonon scattering in PbTe. Nature Materials, 2011, 10, 614-619.	13.3	561
3	Unconventional superconductivity in Ba _{0.6} K _{0.4} Fe ₂ As ₂ from inelastic neutron scattering. Nature, 2008, 456, 930-932.	13.7	543
4	Neutron scattering in the proximate quantum spin liquid $\hat{\Gamma}_2$ -RuCl ₃ . Science, 2017, 356, 1055-1059.	6.0	499
5	Cooperative Paramagnetism in the Geometrically Frustrated Pyrochlore Antiferromagnet Tb ₂ Ti ₂ O ₇ . Physical Review Letters, 1999, 82, 1012-1015.	2.9	487
6	Magnetism in Fe-based superconductors. Journal of Physics Condensed Matter, 2010, 22, 203203.	0.7	289
7	Phase transitions in LaFeAsO: Structural, magnetic, elastic, and transport properties, heat capacity and Mössbauer spectra. Physical Review B, 2008, 78, .	1.1	284
8	Low-temperature crystal and magnetic structure of $\hat{\Gamma}_2$ -RuCl ₃ . Physical Review B, 2016, 93, .	1.1	271
9	Excitations in the field-induced quantum spin liquid state of $\hat{\Gamma}_2$ -RuCl ₃ . Npj Quantum Materials, 2018, 3, .	1.8	254
10	Two-dimensional resonant magnetic excitation in BaFe _{1.84} Co _{0.16} . Physical Review Letters, 2009, 102, 107005.	2.9	237
11	Evolution of spin excitations into the superconducting state in FeTe _{1-x} Sex. Nature Physics, 2010, 6, 182-186.	6.5	151
12	Static and Dynamic Magnetism in Underdoped Superconductor BaFe _{1.92} Co _{0.08} . Physical Review Letters, 2009, 103, 087002.	2.9	150
13	Magnetic correlations in the quasi-two-dimensional semiconducting ferromagnet CrSiTe ₃ . Physical Review B, 2015, 92, .	1.1	134
14	Lattice and magnetic structures of PrFeAsO and PrFeAsO _{0.85} . Physical Review B, 2013, 87, .	1.1	133
15	Phonon Lifetime Investigation of Anharmonicity and Thermal Conductivity of UO ₂ . Neutron Scattering and Theory. Physical Review Letters, 2013, 110, 157401.	2.9	132
16	Three-Dimensional Magnetic Correlations in Multiferroic LuFe ₂ O ₄ . Physical Review Letters, 2008, 100, 107601.	2.9	130
17	Charge Order in LuFe ₂ O ₄ : Antiferroelectric Ground State and Coupling to Magnetism. Physical Review Letters, 2008, 101, 227601.	2.9	120
18	Magnetically Driven Metal-Insulator Transition in NaOsO ₃ . Physical Review Letters, 2012, 108, 257209.	2.9	115

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19	Anisotropic Three-Dimensional Magnetism in CaFeAs_2 . Physical Review Letters, 2008, 101, 227205.	2.9	90
20	The valence-fluctuating ground state of plutonium. Science Advances, 2015, 1, e1500188.	4.7	89
21	Paramagnetic spin correlations in CaFe_2As_2 crystals. Physical Review B, 2010, 81, .	2.9	84
22	Interaction Driven Subgap Spin Exciton in the Kondo Insulator SmB_6 . Physical Review Letters, 2015, 114, 036401.	2.9	83
23	Weak Ferromagnetism and Field-Induced Spin Reorientation in ZnO and La_2VO_4 . Physical Review Letters, 2001, 86, 159-162.	1.1	80
24	Finite field regime for a quantum spin liquid in La_2VO_4 . Physical Review B, 2019, 100, .	2.9	78
25	Neutron Scattering Studies of spin excitations in hole-doped $\text{Ba}_{0.67}\text{K}_{0.33}\text{Fe}_2\text{As}_2$ superconductor. Scientific Reports, 2011, 1, 115.	1.6	72
26	Competing magnetic ground states in hole-doped $\text{Ba}(\text{FeAs})_2$ superconductor. Physical Review Letters, 2008, 101, 157004.	1.1	69
27	Phonon Density of States of LaFeAsO . Physical Review Letters, 2008, 101, 157004.	2.9	65
28	Unusual Relationship between Magnetism and Superconductivity in $\text{FeTe}_{0.5}\text{Se}_{0.5}$. Physical Review Letters, 2010, 104, 187002.	2.9	62
29	Spin glass and semiconducting behavior in one-dimensional $\text{BaFe}_2\text{As}_2\text{Se}_3$ crystals. Physical Review B, 2011, 84, .	1.1	58
30	Magnetic order and electronic structure of the Sr_2VO_4 perovskite. Physical Review B, 2015, 91, .	1.1	58
31	Spin-orbit-driven magnetic structure and excitation in the 5d pyrochlore $\text{Cd}_2\text{Os}_2\text{O}_7$. Nature Communications, 2016, 7, 11651.	5.8	56
32	Tomonaga-Luttinger liquid behavior and spin confinement in YbAlO_3 . Nature Communications, 2019, 10, 698.	5.8	56
33	Competing Ferri- and Antiferromagnetic Phases in Geometrically Frustrated LuFe_2O_4 . Physical Review Letters, 2012, 108, 037206.	2.9	55
34	Lattice dynamics reveals a local symmetry breaking in the emergent dipole phase of PbTe . Physical Review B, 2012, 86, .	1.1	55
35	Anisotropic Exchange within Decoupled Tetrahedra in the Quantum Breathing Pyrochlore $\text{Ba}_3\text{V}_2\text{O}_{11}$. Physical Review Letters, 2016, 116, 257204.	2.9	55

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37	Antiferromagnetic order and superlattice structure in nonsuperconducting and superconducting Rb FeAsO . <i>Physical Review B</i> , 2010, 82, .	1.1	54
38	MCVINE – An object oriented Monte Carlo neutron ray tracing simulation package. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 810, 86-99.	0.7	51
39	Structural ordering and symmetry breaking in $\text{Cd}_2\text{Re}_2\text{O}_7$. <i>Physical Review B</i> , 2002, 66, .	1.1	47
40	Inelastic neutron scattering study of the resonance mode in the optimally doped pnictide superconductor LaFeAsO . <i>Physical Review B</i> , 2010, 82, .	1.1	47
41	Singlet-Triplet Dispersion Reveals Additional Frustration in the Triangular-Lattice Dimer Compound BaMn_3O_8 . <i>Physical Review Letters</i> , 2008, 100, 237201.	1.1	46
42	Enhanced spin-phonon-electronic coupling in a 5d oxide. <i>Nature Communications</i> , 2015, 6, 8916.	5.8	45
43	Magnetic Field Enhancement of Heat Transport in the 2D Heisenberg Antiferromagnet $\text{K}_2\text{V}_3\text{O}_8$. <i>Physical Review Letters</i> , 2002, 88, 095901.	2.9	44
44	Competition between stripe and checkerboard magnetic instabilities in Mn-doped BaFe_2As_2 . <i>Physical Review B</i> , 2012, 86, .	1.1	44
45	Magnetic structural change of Sr_2IrO_4 upon Mn doping. <i>Physical Review B</i> , 2012, 86, .	1.1	43
46	Quantum Spin Correlations in an Organometallic Alternating-Sign Chain. <i>Physical Review Letters</i> , 2007, 99, 087204.	2.9	42
47	Direct observation of dynamic charge stripes in $\text{La}_{1-x}\text{Sr}_x\text{NiO}_4$. <i>Nature Communications</i> , 2014, 5, 3467.	5.8	42
48	Ferro-Orbital Ordering Transition in Iron Telluride FeTe . <i>Physical Review Letters</i> , 2014, 112, 187202.	2.9	40
49	Doping dependence of spin dynamics in electron-doped BaFe_2As_2 . <i>Physical Review B</i> , 2010, 82, .	1.1	38
50	Spin-orbit coupling controlled ground state in Sr_2IrO_4 . <i>Physical Review B</i> , 2016, 93, .	2.1	38
51	On the Chemistry and Physical Properties of Flux and Floating Zone Grown SmB_6 Single Crystals. <i>Scientific Reports</i> , 2016, 6, 20860.	1.6	38
52	Effects of Transition Metal Substitutions on the Incommensurability and Spin Fluctuations in BaFe_2As_2 . <i>Physical Review Letters</i> , 2012, 109, 167003.	2.9	37
53	Long-range antiferromagnetic order in the $S=1$ chain compound LiVGe_2O_6 . <i>Physical Review B</i> , 2000, 62, R9244-R9247.	1.1	34
54	Evolution of competing magnetic order in the Sr_2IrO_4 state. <i>Physical Review B</i> , 2015, 92, .	1.1	33

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55	Magnetic structure and spin excitations in BaMn_2As_2 . Physical Review B, 2014, 89, .		82
56	Extended magnetic exchange interactions in the high-temperature ferromagnet MnBi. Applied Physics Letters, 2016, 108, .	1.5	32
57	Dispersion magnetic excitations in the $\text{Ba}_3\text{Mn}_2\text{S}_7$ antiferromagnet. Physical Review B, 2014, 89, .	1.1	31
58	Spin-Orbit Coupling-Controlled $\text{Ba}_3\text{Mn}_2\text{S}_7$ Electronic Ground State in $\text{Ba}_3\text{Mn}_2\text{S}_7$. Physical Review B, 2014, 89, .	2.9	31
59	Decoupled spin dynamics in the rare-earth orthoferrite YbFeO_3 : Evolution of magnetic excitations through the spin-reorientation transition. Physical Review B, 2018, 98, .	1.1	31
60	Dispersion of the superconducting spin resonance in underdoped and antiferromagnetic BaFe_2As_2 . Physical Review B, 2010, 81, .	1.1	30
61	Magnetism and Disorder Effects on Muon Spin Rotation Measurements of the Magnetic Penetration Depth in Iron-Arsenic Superconductors. Physical Review Letters, 2011, 106, 127002.	2.9	28
62	Spin-liquid polymorphism in a correlated electron system on the threshold of superconductivity. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 10316-10320.	3.3	28
63	Effect of molybdenum4dhole substitution in BaFe_2As_2 . Physical Review B, 2012, 85, .	1.1	27
64	$\text{Ca}_4\text{IrO}_{10}$ spin-orbit insulating state close to the cubic limit in $\text{Ca}_4\text{IrO}_{10}$. Physical Review B, 2014, 89, .	1.1	27
65	Magnetic ground state of the Ising-like antiferromagnet IrO_2 . Physical Review B, 2017, 96, .	1.1	27
66	Chiral and Collinear Ordering in a Distorted Triangular Antiferromagnet. Physical Review Letters, 2009, 102, 037202.	2.9	26
67	Crystal field splitting, local anisotropy, and low-energy excitations in the quantum magnet YbCl_3 . Physical Review B, 2019, 100, .	1.1	26
68	Temperature Dependence of the Magnetic Penetration Depth in the Vortex State of the Pyrochlore Superconductor, $\text{Cd}_2\text{Re}_2\text{O}_7$. Physical Review Letters, 2002, 89, 147002.	2.9	24
69	Antiferromagnetic ordering and dipolar interactions of YbAlO_3 . Physical Review B, 2019, 99, .	1.1	24
70	Van Hove singularity in the magnon spectrum of the antiferromagnetic quantum honeycomb lattice. Nature Communications, 2021, 12, 171.	5.8	24
71	Quasi-One-Dimensional Magnons in an Intermetallic Marcasite. Physical Review Letters, 2012, 108, 167202.	2.9	21
72	Temperature-dependent bilayer ferromagnetism in $\text{Sr}_3\text{Ru}_2\text{O}_7$. Physical Review B, 2006, 73, .	1.1	19

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73	<p>Crystal structure determination of CaMn_2O_6 using neutron and x-ray scattering. Physical Review B, 2015, 91, .</p> <p>Influence of interstitial Mn on magnetism in the room-temperature ferromagnet LiOsO_4. Physical Review B, 2015, 91, .</p>	1.1	19
74	Influence of interstitial Mn on magnetism in the room-temperature ferromagnet LiOsO_4 . Physical Review B, 2015, 91, .	1.1	19
75	Critical Phenomena of the Spin-Peierls Transition in CuGeO_3 . Physical Review Letters, 1996, 76, 4919-4922.	2.9	18
76	X-ray-diffraction study of critical phenomena at the spin-Peierls transition in CuGeO_3 . Physical Review B, 1998, 57, 14097-14104.	1.1	18
77	Magnetic excitation spectrum of the square lattice $S=1/2$ Heisenberg antiferromagnet $\text{K}_2\text{V}_3\text{O}_8$. Physical Review B, 2006, 74, .	1.1	17
78	Antiferromagnetic order in MnO spherical nanoparticles. Physical Review B, 2011, 83, .	1.1	17
79	c-axis Josephson tunneling in twinned and untwinned YBCO-Pb Junctions. Physical Review B, 1997, 55, 9088-9093.	1.1	15
80	Critical phenomena at the spin-Peierls transition in $\text{MEM}(\text{TCNQ})_2$. Physical Review B, 1999, 59, 9372-9381.	1.1	15
81	UB matrix implementation for inelastic neutron scattering experiments. Journal of Applied Crystallography, 2005, 38, 405-411.	1.9	15
82	Magnetic order tuned by Cu substitution in $\text{Fe}_{1-x}\text{Cu}_x\text{Te}$. Physical Review B, 2012, 86, .	1.1	15
83	Magnetic properties of the $S=12$ quasisquare lattice antiferromagnet $\text{Cu}_2(\text{H}_2\text{O})_2(\text{pyz})$ ($\text{pyz}=\text{pyrazine}$) investigated by neutron scattering. Physical Review B, 2012, 86, .	1.1	15
84	Crossover from spin waves to diffusive spin excitations in underdoped BaFe_2As_2 . Physical Review B, 2014, 89, .	1.1	15
85	Origin of magnetic excitation gap in double perovskite Sr_2CuO_7 . Physical Review B, 2018, 98, .	1.1	15
86	Two Dimensional Ordering and Fluctuations in NaV_2O_5 . Physical Review Letters, 2000, 84, 3446-3449.	2.9	14
87	SPICE Spectrometer and Instrument Control Environment. Physica B: Condensed Matter, 2006, 385-386, 1336-1339.	1.3	14
88	Ground state of a quantum critical system: Neutron scattering on CeTl . Physical Review B, 2007, 73, 140401.	1.1	14
89	Neutron scattering and scaling behavior in YbFe_2 . Physical Review B, 2007, 73, 140401.	1.1	14
90	Frustrated Magnetism in Mott Insulating YbFe_2 . Physical Review B, 2007, 73, 140401.	2.8	14

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91	Spin excitations in BaFe_2As_2 observed by inelastic neutron scattering. Physical Review B, 2009, 80, .	1.84	13
92	Antiferromagnetism, structural properties, and electronic transport of $\text{BaCo}_0.9\text{Ni}_0.1\text{S}$. Physical Review B, 1997, 55, 12375-12381.	1.1	12
93	Structural modulation in $\text{K}_2\text{V}_3\text{O}_8$. Journal of Solid State Chemistry, 2007, 180, 812-817.	1.4	12
94	Doping dependence of the spin excitations in the Fe-based superconductors $\text{Fe}_{1+y}\text{Te}_{1-x}\text{S}_x$. Physical Review B, 2013, 87, .	1.1	12
95	Interplay of spin-orbit coupling and hybridization in CaMn_3S_8 and CaMn_3S_7 . Physical Review B, 2017, 96, .	1.1	12
96	Clamp cell with <i>in situ</i> pressure monitoring for low-temperature neutron scattering measurements. High Pressure Research, 2018, 38, 482-492.	0.4	12
97	Spatial inhomogeneity in $\text{RFeAsO}_{1-x}\text{F}_x$ (R=Pr, Nd) determined from rare-earth crystal-field excitations. Physical Review B, 2011, 83, .	1.1	11
98	Coupling of spin and lattice modes in the antiferromagnet $\text{K}_2\text{V}_2\text{O}_7$. Physical Review B, 2017, 96, .	1.1	11
99	Behavior of the breathing pyrochlore lattice $\text{Ba}_3\text{Yb}_2\text{Zn}_5\text{O}_{11}$ in applied magnetic field. Journal of Physics Condensed Matter, 2018, 30, 455801.	0.7	11
100	Anisotropic spin waves and exchange interactions in the A-type antiferromagnetic state of $\text{Pr}_0.5\text{Sr}_0.5\text{MnO}_3$. Physical Review B, 2006, 73, .	1.1	10
101	Phase transitions involving vacancy ordering in two metal mercuric iodides, Ag_2HgI_4 and Cu_2HgI_4 . Journal of Applied Physics, 1995, 77, 6039-6041.	1.1	9
102	Spin-lozenge thermodynamics and magnetic excitations in Na_3RuO_4 . Journal of Physics Condensed Matter, 2009, 21, 506003.	0.7	9
103	Temperature dependence of the resonance and low-energy spin excitations in superconducting $\text{FeTe}_{0.6}\text{Se}_{0.4}$. Physical Review B, 2012, 85, .	1.1	9
104	Relevance of Kondo physics for the temperature dependence of the bulk modulus in plutonium. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E268.	3.3	9
105	Physical properties of the trigonal binary compound Nd_2O_3 . Physical Review Materials, 2018, 2, .	0.9	9
106	CHESS: The future direct geometry spectrometer at the second target station. Review of Scientific Instruments, 2022, 93, .	0.6	9
107	Critical phenomena at the spin-Peierls transition in doped CuGeO_3 . Physical Review B, 1998, 58, 12252-12259.	1.1	8
108	Spin-wave excitation in the antiferromagnetic bilayer ruthenate CaRu_2O_7 . Physical Review B, 2011, 84, .	1.1	8

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109	X-ray single-crystal study of the low-temperature structure of. Journal of Physics Condensed Matter, 1996, 8, 10899-10906.	0.7	7
110	Neutron, electron, and x-ray scattering investigation of Cr $1\hat{x}$ V x near quantum criticality. Physical Review B, 2014, 90, . Effect of pressure on the neutron spin resonance in the unconventional superconductor	1.1	7
111	FeTe $\langle \text{http://www.w3.org/1998/Math/MathML} \rangle$ $\langle \text{mml:msub} \rangle \langle \text{mml:mrow} \rangle$ $\langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 0.6 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle \text{Se} \langle \text{mml:math} \rangle$ Modified magnetism within the coherence volume of superconducting $\langle \text{mml:math} \rangle \langle \text{mml:mrow} \rangle$ $\langle \text{http://www.w3.org/1998/Math/MathML} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \text{ath} \rangle$. Physical Review B, 2012.	1.1	6
112	Strong anisotropy within a Heisenberg model in the $\langle \text{mml:math} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 1 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle + \langle \text{mml:mo} \rangle \langle \text{mml:mi} \rangle \hat{r} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ $\langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle x \langle \text{mml:mi} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle$ insulating state of $\langle \text{mml:math} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 1 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle \hat{a}^2 \langle \text{mml:mo} \rangle \langle \text{mml:mi} \rangle x \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ $\langle \text{http://www.w3.org/1998/Math/MathML} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle J \langle \text{mml:mi} \rangle \langle \text{mml:mtext} \rangle \text{eff} \langle \text{mml:mtext} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \text{Sr} \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ $\langle \text{http://www.w3.org/1998/Math/MathML} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \text{CeCu} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 6 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$	1.1	6
113	Physical Review B, 2016, 94, .	1.1	6
114	Spin dynamics of the low-dimensional magnet (CH ₃) ₂ NH ₂ CuCl ₃ . Physica B: Condensed Matter, 2006, 385-386, 438-440.	1.3	5
115	Anisotropic inplane spin correlation in the parent and Co-doped BaFe ₂ As ₂ : A neutron scattering study. Physica C: Superconductivity and Its Applications, 2014, 507, 25-30.	0.6	5
116	Structural and magnetic phase transitions in $\langle \text{mml:math} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \text{CeCu} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 6 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$		

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127	Possible observation of Kondo screening cloud in $\text{Yb}_{14}\text{MnSb}_{11}$. Philosophical Magazine, 2020, 100, 1204-1210.	0.7	1
128	Phonon softening and anomalous mode near the critical point in $\text{Ca}_{1-x}\text{Ce}_x\text{MnO}_3$. Physical Review B, 2009, 79, .	1.1	0
129	Neutron diffraction in a model itinerant metal near a quantum critical point. Journal of Physics: Conference Series, 2009, 150, 042189.	0.3	0
130	New Executive Committee of Neutron Scattering Society of America. Neutron News, 2013, 24, 39-39.	0.1	0
131	The Neutron Scattering Society of America is pleased to announce the 2014 recipients of its four major prizes. Neutron News, 2014, 25, 23-26.	0.1	0
132	Magnetic Excitations in the Kondo Insulator SmB_6 . Acta Crystallographica Section A: Foundations and Advances, 2014, 70, C1542-C1542.	0.0	0
133	The Neutron Scattering Society of America Prizes. Neutron News, 2016, 27, 43-43.	0.1	0
134	The 8th American Conference on Neutron Scattering. Neutron News, 2016, 27, 4-10.	0.1	0
135	What can we learn from not so high pressure physics?. Acta Crystallographica Section A: Foundations and Advances, 2017, 73, C1430-C1430.	0.0	0