David J Payne

List of Publications by Year
in descending order

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109 papers	7,130 citations	66343 42 h-index	56724 83 g-index
110 all docs	110 docs citations	110 times ranked	11098 citing authors

#	Article	IF	Citations
1	Linking in situ charge accumulation to electronic structure in doped SrTiO3 reveals design principles for hydrogen-evolving photocatalysts. Nature Materials, 2021, 20, 511-517.	27.5	82
2	Identification of hidden orbital contributions in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>La</mml:mi><mml:mrow><mml:mn>0.65</mml:mn> valence band. Physical Review Materials, 2021, 5, .	2.4	2
3	Quantitative structure determination of adsorbed formate and surface hydroxyls on Fe₃O₄(001). Physical Chemistry Chemical Physics, 2021, 24, 488-496.	2.8	1
4	Surface enhanced Raman scattering artificial nose for high dimensionality fingerprinting. Nature Communications, 2020, 11, 207.	12.8	93
5	Origin of Openâ€Circuit Voltage Enhancements in Planar Perovskite Solar Cells Induced by Addition of Bulky Organic Cations. Advanced Functional Materials, 2020, 30, 1906763.	14.9	47
6	Quantum Confinement and Thicknessâ€Dependent Electron Transport in Solutionâ€Processed In₂O₃ Transistors. Advanced Electronic Materials, 2020, 6, 2000682.	5.1	16
7	Antimony substituted lanthanum orthoniobate proton conductor â€“ Structure and electronic properties. Journal of the American Ceramic Society, 2020, 103, 6575-6585.	3.8	6
8	Exsolution of Catalytically Active Iridium Nanoparticles from Strontium Titanate. ACS Applied Materials & Interfaces, 2020, 12, 37444-37453.	8.0	24
9	Low temperature methane conversion with perovskite-supported exo/endo-particles. Journal of Materials Chemistry A, 2020, 8, 12406-12417.	10.3	22
10	Adsorbate-induced structural evolution changes the mechanism of CO oxidation on a Rh/Fe₃O₄(001) model catalyst. Nanoscale, 2020, 12, 5866-5875.	5.6	25
11	Validation of the inverted adsorption structure for free-base tetraphenyl porphyrin on Cu(111). Chemical Communications, 2020, 56, 3681-3684.	4.1	11
12	Probing structural changes upon carbon monoxide coordination to single metal adatoms. Journal of Chemical Physics, 2020, 152, 051102.	3.0	4
13	Direct insight into the band structure of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>SrNbO</mml:mi><mml:mn>3</mml:mn></mml:msub> Physical Review Materials, 2020, 4, .	2.4	17
14	Electron spectroscopy of ionic liquids: experimental identification of atomic orbital contributions to valence electronic structure. Physical Chemistry Chemical Physics, 2019, 21, 18893-18910.	2.8	9
15	Developments in electrochemical processes for recycling leadâ€“acid batteries. Current Opinion in Electrochemistry, 2019, 16, 83-89.	4.8	65
16	Electronic Structure of Lanthanide-Doped Bismuth Vanadates: A Systematic Study by X-ray Photoelectron and Optical Spectroscopies. Journal of Physical Chemistry C, 2019, 123, 8484-8499.	3.1	4
17	Water uptake analysis of acceptor-doped lanthanum orthoniobates. Journal of Thermal Analysis and Calorimetry, 2019, 138, 225-232.	3.6	12
18	Rapid photonic curing of solution-processed In2O3 layers on flexible substrates. Applied Surface Science, 2019, 479, 974-979.	6.1	19

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19	Identification of Lone-Pair Surface States on Indium Oxide. Journal of Physical Chemistry C, 2019, 123, 1700-1709.	3.1	20
20	Insights into the electronic structure of OsO2 using soft and hard x-ray photoelectron spectroscopy in combination with density functional theory. Physical Review Materials, 2019, 3, .	2.4	9
21	The synergistic effect of cobalt oxide and Gd-CeO₂ dual infiltration in LSCF/CGO cathodes. Journal of Materials Chemistry A, 2018, 6, 5071-5081.	10.3	24
22	Revisiting the origin of satellites in core-level photoemission of transparent conducting oxides: The case of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>n</mml:mi></mml:math> -doped <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>SnO</mml:mi><mml:mn>2</mml:mn></mml:msub></mm Physical Review B, 2018, 97, .	3.2	30
23	Copper (I) Selenocyanate (CuSeCN) as a Novel Holeâ€Transport Layer for Transistors, Organic Solar Cells, and Lightâ€Emitting Diodes. Advanced Functional Materials, 2018, 28, 1707319.	14.9	19
24	NASICON LiM₂(PO₄)₃ electrolyte (M = Zr) and electrode (M = Ti) materials for all solid-state Li-ion batteries with high total conductivity and low interfacial resistance. Journal of Materials Chemistry A, 2018, 6, 5296-5303.	10.3	62
25	A â€œcleanroom-freeâ€• and scalable manufacturing technology for the microfluidic generation of lipid-stabilized droplets and cell-sized multisomes. Sensors and Actuators B: Chemical, 2018, 267, 34-41.	7.8	17
26	PdIn intermetallic nanoparticles for the Hydrogenation of CO2 to Methanol. Applied Catalysis B: Environmental, 2018, 220, 9-18.	20.2	153
27	Crystal structure and surface characteristics of Sr-doped GdBaCo₂O_{6â^Î´} double perovskites: oxygen evolution reaction and conductivity. Journal of Materials Chemistry A, 2018, 6, 5335-5345.	10.3	42
28	The Reduction Properties of Mâ€“Doped (M=Zr, Gd) CeO₂/YSZ Scaffolds Coâ€“Infiltrated with Nickel. Energy Technology, 2018, 6, 2045-2052.	3.8	8
29	Lead acid battery recycling for the twenty-first century. Royal Society Open Science, 2018, 5, 171368.	2.4	65
30	The influence of oxygen on the surface interaction between CO2 and copper studied by ambient pressure X-ray photoelectron spectroscopy. Surface Science, 2018, 677, 121-127.	1.9	6
31	Direct measurement of Ni incorporation into Fe₃O₄(001). Physical Chemistry Chemical Physics, 2018, 20, 16469-16476.	2.8	20
32	Tailoring SOFC Electrode Microstructures for Improved Performance. Advanced Energy Materials, 2018, 8, 1800120.	19.5	159
33	Role of spin-orbit coupling in the electronic structure of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Ir</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review Materials, 2018, 2, .	2.4	14
34	Pd₂Ga-Based Colloids as Highly Active Catalysts for the Hydrogenation of CO₂ to Methanol. ACS Catalysis, 2017, 7, 1186-1196.	11.2	78
35	Nanostructuring of SnO2 via solution-based and hard template assisted method. Thin Solid Films, 2017, 626, 38-45.	1.8	12
36	Tunable porous boron nitride: Investigating its formation and its application for gas adsorption. Microporous and Mesoporous Materials, 2017, 243, 154-163.	4.4	51

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37	Laboratory-based high pressure X-ray photoelectron spectroscopy: A novel and flexible reaction cell approach. Review of Scientific Instruments, 2017, 88, 033102.	1.3	10
38	Electron Hopping Across Heminâ€Doped Serum Albumin Mats on Centimeterâ€Length Scales. Advanced Materials, 2017, 29, 1700810.	21.0	26
39	Reversible Redox Cycling of Well-Defined, Ultrasmall Cu/Cu₂O Nanoparticles. ACS Nano, 2017, 11, 2714-2723.	14.6	41
40	The impact of post-deposition annealing on the performance of solution-processed single layer In₂O₃ and isotype In₂O₃/ZnO heterojunction transistors. Journal of Materials Chemistry C, 2017, 5, 59-64.	5.5	34
41	Nanoscale Structureâ€“Property Relationships in Low-Temperature Solution-Processed Electron Transport Layers for Organic Photovoltaics. Crystal Growth and Design, 2017, 17, 6559-6564.	3.0	6
42	Sub-second photonic processing of solution-deposited single layer and heterojunction metal oxide thin-film transistors using a high-power xenon flash lamp. Journal of Materials Chemistry C, 2017, 5, 11724-11732.	5.5	37
43	Scalable High-Affinity Stabilization of Magnetic Iron Oxide Nanostructures by a Biocompatible Antifouling Homopolymer. ACS Applied Materials & Interfaces, 2017, 9, 40059-40069.	8.0	19
44	Multibranched Gold Nanoparticles with Intrinsic LAT-1 Targeting Capabilities for Selective Photothermal Therapy of Breast Cancer. ACS Applied Materials & Interfaces, 2017, 9, 39259-39270.	8.0	74
45	Effects of low temperature annealing on the photo-electrochemical performance of tin-doped hematite photo-anodes. Electrochimica Acta, 2017, 251, 1-11.	5.2	25
46	High-Vacuum Deposition of Biferrocene Thin Films on Room-Temperature Substrates. Chemistry of Materials, 2017, 29, 8663-8669.	6.7	4
47	Quantifying the critical thickness of electron hybridization in spintronics materials. Nature Communications, 2017, 8, 16051.	12.8	26
48	Copper(I) Thiocyanate (CuSCN) Holeâ€Transport Layers Processed from Aqueous Precursor Solutions and Their Application in Thinâ€Film Transistors and Highly Efficient Organic and Organometal Halide Perovskite Solar Cells. Advanced Functional Materials, 2017, 27, 1701818.	14.9	208
49	Electronic Structure and Band Alignment at the NiO and SrTiO₃ pâ€“n Heterojunctions. ACS Applied Materials & Interfaces, 2017, 9, 26549-26555.	8.0	65
50	A conducting polymer with enhanced electronic stability applied in cardiac models. Science Advances, 2016, 2, e1601007.	10.3	173
51	Identification of metal s states in Sn-doped anatase by polarisation dependent hard X-ray photoelectron spectroscopy. Chemical Physics Letters, 2016, 647, 59-63.	2.6	7
52	A Comparison of Explicitlyâ€terminated Diamond Electrodes Decorated with Gold Nanoparticles. Electroanalysis, 2016, 28, 88-95.	2.9	6
53	Iridium's impact. Nature Chemistry, 2016, 8, 392-392.	13.6	13
54	Electrochemical recycling of lead from hybrid organicâ€“inorganic perovskites using deep eutectic solvents. Green Chemistry, 2016, 18, 2946-2955.	9.0	62

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55	Surface Termination and CO₂ Adsorption onto Bismuth Pyrochlore Oxides. Chemistry of Materials, 2016, 28, 90-96.	6.7	25
56	Modular and Versatile Spatial Functionalization of Tissue Engineering Scaffolds through Fiberâ€Initiated Controlled Radical Polymerization. Advanced Functional Materials, 2015, 25, 5748-5757.	14.9	35
57	Electrochemical Synthesis of PbO2, Pb3O4 and PbO Films on a Transparent Conducting Substrate. Electrochimica Acta, 2015, 156, 283-288.	5.2	36
58	Elucidating the deprotonation of polyaniline films by X-ray photoelectron spectroscopy. Journal of Materials Chemistry C, 2015, 3, 7180-7186.	5.5	95
59	Increased photoelectron transmission in High-pressure photoelectron spectrometers using â€œswift accelerationâ€• Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2015, 785, 191-196.	1.6	22
60	Electronic and surface properties of Ga-doped In2O3 ceramics. Applied Surface Science, 2015, 349, 970-982.	6.1	29
61	A study of the pressure profiles near the first pumping aperture in a high pressure photoelectron spectrometer. Journal of Electron Spectroscopy and Related Phenomena, 2015, 205, 57-65.	1.7	24
62	A versatile photoelectron spectrometer for pressures up to 30 mbar. Review of Scientific Instruments, 2014, 85, 075119.	1.3	41
63	Hard x-ray photoelectron spectroscopy as a probe of the intrinsic electronic properties of CdO. Physical Review B, 2014, 89, .	3.2	28
64	Valence States in CeVO₄ and Ce_{0.5}Bi_{0.5}VO₄ Probed by Density Functional Theory Calculations and X-ray Photoemission Spectroscopy. Journal of Physical Chemistry C, 2014, 118, 25330-25339.	3.1	14
65	A solution chemistry approach to epitaxial growth and stabilisation of Bi₂Ti₂O₇ films. Journal of Materials Chemistry A, 2014, 2, 18241-18245.	10.3	23
66	Valence-band orbital character of CdO: A synchrotron-radiation photoelectron spectroscopy and density functional theory study. Physical Review B, 2014, 89, .	3.2	38
67	The electronic structure of silver orthophosphate: experiment and theory. Journal of Materials Chemistry A, 2014, 2, 6092-6099.	10.3	21
68	Understanding the Electronic Structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>IrO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math> Hard-X-ray Photoelectron Spectroscopy and Density-Functional Theory. Physical Review Letters, 2014, 112, 117601.	7.8	107
69	The dual role of Parylene C in chemical sensing: Acting as an encapsulant and as a sensing membrane for pH monitoring applications. Sensors and Actuators B: Chemical, 2013, 186, 1-8.	7.8	32
70	Structure and composition of linear TiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mi>x</mml:mi></mml:msub></mml:math>nanostructures on SrTiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>(001). Physical Review B, 2012, 86, .	3.2	18
71	Domain Matching Epitaxial Growth of In₂O₃ Thin Films on Î±-Al₂O₃(0001). Crystal Growth and Design, 2012, 12, 1000-1007.	3.0	52
72	Cross section and resonance effects in photoemission from Sn-doped In2O3(111). Solid State Communications, 2012, 152, 194-198.	1.9	5

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73	Three-Dimensional Spatial Distribution of Cr atoms in Doped Indium Oxide. Chemistry of Materials, 2011, 23, 1085-1087.	6.7	18
74	Nature of the Band Gap and Origin of the Conductivity of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>PbO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>Revealed by Theory and Experiment. Physical Review Letters, 2011, 107, 246402.	7.8	93
75	The nature of electron lone pairs in BiVO4. Applied Physics Letters, 2011, 98, .	3.3	90
76	Stereochemistry of post-transition metal oxides: revision of the classical lone pair model. Chemical Society Reviews, 2011, 40, 4455.	38.1	590
77	Atomic and electronic surface structures of dopants in oxides: STM and XPS of Nb- and La-doped SrTiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi /><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>(001). Physical Review B, 2011, 83, .	3.2	89
78	Determination of the Poisson ratio of (001) and (111) oriented thin films of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi>In</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>by x-ray diffraction. Physical Review B, 2011, 84, .	3.2	20
79	Electronic structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>In</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub Sn-doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>In</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub Physical Review B, 2010, 81, .	3.2	114
80	Theoretical and Experimental Study of the Electronic Structures of MoO₃and MoO₂. Journal of Physical Chemistry C, 2010, 114, 4636-4645.	3.1	533
81	The influence of Sn doping on the growth of In2O3 on Y-stabilized ZrO2(100) by oxygen plasma assisted molecular beam epitaxy. Journal of Applied Physics, 2009, 106, .	2.5	41
82	Electronic structure of In2O3 from resonant x-ray emission spectroscopy. Applied Physics Letters, 2009, 94, .	3.3	42
83	A study of core and valence levels in Î²-PbO2 by hard X-ray photoemission. Journal of Electron Spectroscopy and Related Phenomena, 2009, 169, 26-34.	1.7	40
84	Investigation of the growth of In2O3 on Y-stabilized ZrO2(100) by oxygen plasma assisted molecular beam epitaxy. Thin Solid Films, 2009, 517, 4286-4294.	1.8	45
85	Comparative study of bandwidths in copper delafossites from x-ray emission spectroscopy. Physical Review B, 2009, 80, .	3.2	36
86	Surface Structure and Electronic Properties of In₂O₃(111) Single-Crystal Thin Films Grown on Y-Stabilized ZrO₂(111). Chemistry of Materials, 2009, 21, 4353-4355.	6.7	54
87	X-ray spectroscopic study of the electronic structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>CuCrO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mm Physical Review B, 2009, 79, .	3.2	88
88	Effect of Cr substitution on the electronic structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>CuAl</mml:mtext></mml:mrow><mml:mrow><mml:mn>1</mml: Physical Review B, 2009, 79, .	3.2	116
89	Nitrogen diffusion in doped TiO2 (110) single crystals: a combined XPS and SIMS study. Journal of Materials Chemistry, 2009, 19, 8418.	6.7	64
90	Shallow donor state of hydrogen in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>In</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>SnO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:ms Implications for conductivi. Physical Review B, 2009, 80, .	3.2	135

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91	Interfacial Diffusion during Growth of SnO₂(110) on TiO₂(110) by Oxygen Plasma Assisted Molecular Beam Epitaxy. Crystal Growth and Design, 2009, 9, 1793-1797.	3.0	20
92	Band gap, electronic structure, and surface electron accumulation of cubic and rhombohedral<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>In</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub> Physical Review B, 2009, 79, .	3.2	369
93	High resolution X-ray photoemission study of nitrogen doped TiO2 rutile single crystals. Chemical Physics Letters, 2008, 454, 314-317.	2.6	48
94	Growth of Microscale In₂O₃ Islands on Y-Stabilized Zirconia(100) by Molecular Beam Epitaxy. Chemistry of Materials, 2008, 20, 4551-4553.	6.7	28
95	Nature of the Band Gap of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>In</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>Revealed by First-Principles Calculations and X-Ray Spectroscopy. Physical Review Letters, 2008, 100, 167402.	7.8	576
96	A comparative study of the electronic structures of SrCu2O2 and PbCu2O2 by density functional theory, high resolution X-ray photoemission and electron paramagnetic resonance spectroscopy. Journal of Materials Chemistry, 2008, 18, 2798.	6.7	21
97	On-site interband excitations in resonant inelastic x-ray scattering from<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="normal">Cu</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">O</mml:mi></mml:mrow></mml:math>. Physical Review B, 2008, 77, .	3.2	70
98	Growth of In2O3(100) on Y-stabilized ZrO2(100) by O-plasma assisted molecular beam epitaxy. Applied Physics Letters, 2008, 92, .	3.3	102
99	Surface Electron Accumulation and the Charge Neutrality Level In<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>In</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2008, 101, 116808.	7.8	236
100	Nature of electronic states at the Fermi level of metallicÎ²â˜PbO2revealed by hard x-ray photoemission spectroscopy. Physical Review B, 2007, 75, .	3.2	38
101	A study of the metal to nonmetal transition in Bi-doped Î²â€PbO2 by high resolution x-ray photoemission. Journal of Applied Physics, 2007, 102, 113717.	2.5	10
102	Experimental and theoretical study of the electronic structures of Î±-PbO and Î²-PbO2. Journal of Materials Chemistry, 2007, 17, 267-277.	6.7	104
103	Photon energy dependence of final state screening in a dilute electron gas system: A synchrotron radiation photoemission study of Î²-PbO2. Chemical Physics Letters, 2007, 443, 61-65.	2.6	3
104	The electronic structure of SrCu2O2 studied by synchrotron radiation excited photoemission and hybrid exchange density functional calculations. Chemical Physics Letters, 2007, 450, 39-43.	2.6	6
105	Electronic structure of theÎ±andÎ´phases ofBi2O3: A combinedab initioand x-ray spectroscopy study. Physical Review B, 2006, 73, .	3.2	187
106	Electronic Origins of Structural Distortions in Post-Transition Metal Oxides: Experimental and Theoretical Evidence for a Revision of the Lone Pair Model. Physical Review Letters, 2006, 96, 157403.	7.8	202
107	A theoretical and experimental study of the distorted pyrochlore Bi2Sn2O7. Journal of Materials Chemistry, 2006, 16, 3452.	6.7	30
108	Why is lead dioxide metallic?. Chemical Physics Letters, 2005, 411, 181-185.	2.6	78

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109	High-resolution x-ray spectroscopic study of the electronic structure of the prototypicalp-type transparent conducting oxideCuAlO2. Physical Review B, 2005, 72, .	3.2	65