Hector D Abruna

List of Publications by Citations

348 papers	30,423 citations	85 h-index	164 g-index
359 ext. papers	33,538 ext. citations	9.6 avg, IF	7.29 L-index

#	Paper	IF	Citations
348	High-rate electrochemical energy storage through Li+ intercalation pseudocapacitance. *Nature Materials*, **2013**, 12, 518-22	27	3039
347	Coulomb blockade and the Kondo effect in single-atom transistors. *Nature*, **2002**, 417, 722-5	50.4	1717
346	Structurally ordered intermetallic platinum-cobalt core-shell nanoparticles with enhanced activity and stability as oxygen reduction electrocatalysts. *Nature Materials*, **2013**, 12, 81-7	27	1467
345	Underpotential deposition at single crystal surfaces of Au, Pt, Ag and other materials. *Chemical Reviews*, **2001**, 101, 1897-930	68.1	703
344	Ketoenamine-linked covalent organic frameworks capable of pseudocapacitive energy storage. *Journal of the American Chemical Society*, **2013**, 135, 16821-4	16.4	682
343	Yolk-shell structure of polyaniline-coated sulfur for lithium-sulfur batteries. *Journal of the American Chemical Society*, **2013**, 135, 16736-43	16.4	663
342	Electron injection from colloidal PbS quantum dots into titanium dioxide nanoparticles. *ACS Nano*, **2008**, 2, 2206-12	16.7	512
341	Effects of Liquid Electrolytes on the ChargeDischarge Performance of Rechargeable Lithium/Sulfur Batteries: Electrochemical and in-Situ X-ray Absorption Spectroscopic Studies. *Journal of Physical Chemistry C*, **2011**, 115, 25132-25137	3.8	463
340	Electrocatalytic activity of ordered intermetallic phases for fuel cell applications. *Journal of the American Chemical Society*, **2004**, 126, 4043-9	16.4	450
339	Activating Pd by morphology tailoring for oxygen reduction. *Journal of the American Chemical Society*, **2009**, 131, 602-8	16.4	417
338	Tunable high performance cross-linked alkaline anion exchange membranes for fuel cell applications. *Journal of the American Chemical Society*, **2010**, 132, 3400-4	16.4	392
337	Phosphonium-functionalized polyethylene: a new class of base-stable alkaline anion exchange membranes. *Journal of the American Chemical Society*, **2012**, 134, 18161-4	16.4	364
336	PbSe nanocrystal excitonic solar cells. *Nano Letters*, **2009**, 9, 3749-55	11.5	333
335	Electroluminescent devices from ionic transition metal complexes. *Journal of Materials Chemistry*, **2007**, 17, 2976-2988		324
334	Solid-state electroluminescent devices based on transition metal complexes. *Chemical Communications*, **2003**, 2392-9	5.8	311
333	Lithium-sulfur battery cathode enabled by lithium-nitrile interaction. *Journal of the American Chemical Society*, **2013**, 135, 763-7	16.4	310
332	Pt-decorated PdCo@Pd/C core-shell nanoparticles with enhanced stability and electrocatalytic activity for the oxygen reduction reaction. *Journal of the American Chemical Society*, **2010**, 132, 17664-6	16.4	286

331	Superior Charge Storage and Power Density of a Conducting Polymer-Modified Covalent Organic Framework. *ACS Central Science*, **2016**, 2, 667-673	16.8	274
330	Tuning oxygen reduction reaction activity via controllable dealloying: a model study of ordered Cu3Pt/C intermetallic nanocatalysts. *Nano Letters*, **2012**, 12, 5230-8	11.5	259
329	Direct measurement of the electric-field distribution in a light-emitting electrochemical cell. *Nature Materials*, **2007**, 6, 894-9	27	256
328	Coordination chemistry in two dimensions: chemically modified electrodes. *Coordination Chemistry Reviews*, **1988**, 86, 135-189	23.2	254
327	Template-free synthesis of hollow-structured Co3O4 nanoparticles as high-performance anodes for lithium-ion batteries. *ACS Nano*, **2015**, 9, 1775-81	16.7	250
326	Rapid and efficient redox processes within 2D covalent organic framework thin films. *ACS Nano*, **2015**, 9, 3178-83	16.7	247
325	Tailoring Pore Size of Nitrogen-Doped Hollow Carbon Nanospheres for Confining Sulfur in Lithium–Sulfur Batteries. *Advanced Energy Materials*, **2015**, 5, 1401752	21.8	243
324	Micromethod for the investigation of the interactions between DNA and redox-active molecules. *Analytical Chemistry*, **1998**, 70, 3162-9	7.8	234
323	Electrochemistry of individual monolayer graphene sheets. *ACS Nano*, **2011**, 5, 2264-70	16.7	208
322	Nanoscale imaging of lithium ion distribution during in situ operation of battery electrode and electrolyte. *Nano Letters*, **2014**, 14, 1453-9	11.5	204
321	Pt skin on AuCu intermetallic substrate: a strategy to maximize Pt utilization for fuel cells. *Journal of the American Chemical Society*, **2014**, 136, 9643-9	16.4	198
320	A ring-opening metathesis polymerization route to alkaline anion exchange membranes: development of hydroxide-conducting thin films from an ammonium-functionalized monomer. *Journal of the American Chemical Society*, **2009**, 131, 12888-9	16.4	193
319	Redox-Active Ferrocenyl Dendrimers: Thermodynamics and Kinetics of Adsorption, In-Situ Electrochemical Quartz Crystal Microbalance Study of the Redox Process and Tapping Mode AFM Imaging. *Journal of the American Chemical Society*, **1997**, 119, 10763-10773	16.4	187
318	Electrochemical determination of activation energies for methanol oxidation on polycrystalline platinum in acidic and alkaline electrolytes. *Physical Chemistry Chemical Physics*, **2007**, 9, 49-77	3.6	186
317	Spectral, electrochemical and electrocatalytic properties of 1,10-phenanthroline-5,6-dione complexes of transition metals. *Inorganic Chemistry*, **1985**, 24, 4263-4267	5.1	174
316	Electroluminescence in ruthenium(II) complexes. *Journal of the American Chemical Society*, **2002**, 124, 13624-8	16.4	168
315	Amylopectin wrapped graphene oxide/sulfur for improved cyclability of lithium-sulfur battery. *ACS Nano*, **2013**, 7, 8801-8	16.7	167
314	Understanding Conversion-Type Electrodes for Lithium Rechargeable Batteries. *Accounts of Chemical Research*, **2018**, 51, 273-281	24.3	166

313	Effects of Dendrimer Generation on Site Isolation of Core Moieties: Electrochemical and Fluorescence Quenching Studies with Metalloporphyrin Core Dendrimers. *Chemistry of Materials*, **1998**, 10, 30-38	9.6	164
312	4-Vinyl-, 6-vinyl-, and 4′-vinyl-2,2′:6′,2″-terpyridinyl ligands: their synthesis and the electrochemistry of their transition-metal coordination complexes. *Journal of the American Chemical Society*, **1987**, 109, 3961-3967	16.4	164
311	Electrocatalytic oxidation of formic acid at an ordered intermetallic PtBi surface. *ChemPhysChem*, **2003**, 4, 193-9	3.2	162
310	Zeptomole voltammetric detection and electron-transfer rate measurements using platinum electrodes of nanometer dimensions. *Analytical Chemistry*, **2003**, 75, 3962-71	7.8	161
309	Synthesis, Characterization, and Electrocatalytic Activity of PtBi and PtPb Nanoparticles Prepared by Borohydride Reduction in Methanol. *Chemistry of Materials*, **2006**, 18, 3365-3372	9.6	160
308	Batteries and electrochemical capacitors. *Physics Today*, **2008**, 61, 43-47	0.9	157
307	Facile Synthesis of Carbon-Supported Pd□Co Core□Shell Nanoparticles as Oxygen Reduction Electrocatalysts and Their Enhanced Activity and Stability with Monolayer Pt Decoration. *Chemistry of Materials*, **2012**, 24, 2274-2281	9.6	154
306	Fabrication and preliminary testing of a planar membraneless microchannel fuel cell. *Journal of Power Sources*, **2005**, 139, 96-105	8.9	149
305	Three-dimensional tracking and visualization of hundreds of Pt-Co fuel cell nanocatalysts during electrochemical aging. *Nano Letters*, **2012**, 12, 4417-23	11.5	145
304	Electrocatalytic performance of fuel oxidation by Pt3Ti nanoparticles. *Journal of the American Chemical Society*, **2008**, 130, 5452-8	16.4	143
303	Near-IR electrochromism in electropolymerized films of a biscyclometalated ruthenium complex bridged by 1,2,4,5-tetra(2-pyridyl)benzene. *Journal of the American Chemical Society*, **2011**, 133, 20720-3	16.4	142
302	Water oxidation catalysis by Co(II) impurities in Co(III)4O4 cubanes. *Journal of the American Chemical Society*, **2014**, 136, 17681-8	16.4	138
301	Multivalent binding motifs for the noncovalent functionalization of graphene. *Journal of the American Chemical Society*, **2011**, 133, 17614-7	16.4	133
300	Electroanalysis with chemically modified electrodes. *Analytical Chemistry*, **1985**, 57, 142-149	7.8	131
299	Synergistic Mn-Co catalyst outperforms Pt on high-rate oxygen reduction for alkaline polymer electrolyte fuel cells. *Nature Communications*, **2019**, 10, 1506	17.4	128
298	Phenazine-Based Covalent Organic Framework Cathode Materials with High Energy and Power Densities. *Journal of the American Chemical Society*, **2020**, 142, 16-20	16.4	125
297	Pt-Rich/Sn-Rich/Pt Nanocubes As Highly Active and Stable Electrocatalysts for the Ethanol Oxidation Reaction. *Journal of the American Chemical Society*, **2018**, 140, 3791-3797	16.4	124
296	Rotating Disk Electrode (RDE) Investigation of BH_4^- and BH_3OH^- Electro-oxidation at Pt and Au: Implications for BH_4^- Fuel Cells. *Journal of Physical Chemistry C*, **2009**, 113, 19700-19712	3.8	124

295	Precise adjustment of nanometric-scale diffusion layers within a redox dendrimer molecule by ultrafast cyclic voltammetry: an electrochemical nanometric microtome. *Chemistry - A European Journal*, **2001**, 7, 2206-26	4.8	123
294	Metal-Organic-Framework-Derived Co-Fe Bimetallic Oxygen Reduction Electrocatalysts for Alkaline Fuel Cells. *Journal of the American Chemical Society*, **2019**, 141, 10744-10750	16.4	122
293	In situ synthesis of lithium sulfide□carbon composites as cathode materials for rechargeable lithium batteries. *Journal of Materials Chemistry A*, **2013**, 1, 1433-1440	13	120
292	Synthesis and Characterization of Redox-Active Metal Complexes Sequentially Self-Assembled onto Gold Electrodes via a New Thiol□terpyridine Ligand. *Langmuir*, **1996**, 12, 4455-4462	4	120
291	Electrogenerated chemiluminescence from PbS quantum dots. *Nano Letters*, **2009**, 9, 789-93	11.5	118
290	Metal ion-induced self-assembly of functionalized 2,6-oligopyridines. 2. Copper-containing double-stranded helicates derived from functionalized quaterpyridine and quinquepyridine: redox state-induced transformations and electron communication in mixed-valence systems. *Inorganic Chemistry*, **1993**, 32, 4420-4435	5.1	117
289	Monomeric and oligomeric complexes of ruthenium and osmium with tetra-2-pyridyl-1,4-pyrazine (TPPZ). *Inorganic Chemistry*, **1993**, 32, 194-203	5.1	117
288	A dual electrolyte H2/O2 planar membraneless microchannel fuel cell system with open circuit potentials in excess of 1.4 V. *Langmuir*, **2005**, 21, 3544-50	4	116
287	Mechanistic insights into operational lithium□sulfur batteries by in situ X-ray diffraction and absorption spectroscopy. *RSC Advances*, **2014**, 4, 18347	3.7	114
286	Highly stable and CO-tolerant Pt/Ti0.7W0.3O2 electrocatalyst for proton-exchange membrane fuel cells. *Journal of the American Chemical Society*, **2010**, 132, 10218-20	16.4	113
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284	Electron transfer through molecules and assemblies at electrode surfaces. *Chemical Reviews*, **2008**, 108, 2721-36	68.1	113
283	In situ electron energy-loss spectroscopy in liquids. *Microscopy and Microanalysis*, **2013**, 19, 1027-35	0.5	112
282	Electrocatalysis of CO2 reduction at surface modified metallic and semiconducting electrodes. *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry*, **1986**, 209, 101-107		111
281	Fe/N/C Nanotubes with Atomic Fe Sites: A Highly Active Cathode Catalyst for Alkaline Polymer Electrolyte Fuel Cells. *ACS Catalysis*, **2017**, 7, 6485-6492	13.1	108
280	Morphology and activity tuning of Cu□Pt/C ordered intermetallic nanoparticles by selective electrochemical dealloying. *Nano Letters*, **2015**, 15, 1343-8	11.5	108
279	Solvent Processable Tetraalkylammonium-Functionalized Polyethylene for Use as an Alkaline Anion Exchange Membrane. *Macromolecules*, **2010**, 43, 7147-7150	5.5	108
278	In operando X-ray studies of the conversion reaction in Mn3O4 lithium battery anodes. *Journal of Materials Chemistry A*, **2013**, 1, 2094-2103	13	105

277	Synthesis, Characterization, and Electrocatalytic Activity of PtBi Nanoparticles Prepared by the Polyol Process. *Chemistry of Materials*, **2005**, 17, 5871-5876	9.6	104
276	Intermetallic PtPb Nanoparticles Prepared by Sodium Naphthalide Reduction of Metal-Organic Precursors: Electrocatalytic Oxidation of Formic Acid. *Chemistry of Materials*, **2006**, 18, 5591-5596	9.6	102
275	Identification of a quenching species in ruthenium tris-bipyridine electroluminescent devices. *Journal of the American Chemical Society*, **2006**, 128, 7761-4	16.4	102
274	Reactivity of monolayer chemical vapor deposited graphene imperfections studied using scanning electrochemical microscopy. *ACS Nano*, **2012**, 6, 3070-9	16.7	99
273	Mechanism of Gold-Assisted Exfoliation of Centimeter-Sized Transition-Metal Dichalcogenide Monolayers. *ACS Nano*, **2018**, 12, 10463-10472	16.7	99
272	High-Loading Intermetallic Pt3Co/C Core–Shell Nanoparticles as Enhanced Activity Electrocatalysts toward the Oxygen Reduction Reaction (ORR). *Chemistry of Materials*, **2018**, 30, 1532-1539	9.6	97
271	Kinetics of interfacial electron transfer at single-layer graphene electrodes in aqueous and nonaqueous solutions. *Langmuir*, **2013**, 29, 1683-94	4	97
270	Key Parameters Governing the Energy Density of Rechargeable Li/S Batteries. *Journal of Physical Chemistry Letters*, **2014**, 5, 882-5	6.4	94
269	Tunnelling spectra of individual magnetic endofullerene molecules. *Nature Materials*, **2008**, 7, 884-9	27	93
268	Pt-Decorated Composition-Tunable Pd-Fe@Pd/C Core-Shell Nanoparticles with Enhanced Electrocatalytic Activity toward the Oxygen Reduction Reaction. *Journal of the American Chemical Society*, **2018**, 140, 7248-7255	16.4	90
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266	Enantiomerically pure chiral coordination polymers: synthesis, spectroscopy, and electrochemistry in solution and on surfaces. *Journal of the American Chemical Society*, **2001**, 123, 10265-71	16.4	86
265	Synthesis, Characterization, Electrochemistry, and EQCM Studies of Polyamidoamine Dendrimers Surface-Functionalized with Polypyridyl Metal Complexes. *Langmuir*, **1999**, 15, 872-884	4	85
264	Electrochemical and mechanistic studies of Re(CO)3(dmbpy)Cl] and their relation to the catalytic reduction of CO2. *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry*, **1986**, 201, 347-358		85
263	Single-molecule conductance of pyridine-terminated dithienylethene switch molecules. *ACS Nano*, **2011**, 5, 5115-23	16.7	84
262	Metal ion-induced self-assembly of functionalized 2,6-oligopyridines. 4. Metal-metal interaction in double-stranded, dicuprous helicates derived from terpyridine derivatives. *Inorganic Chemistry*, **1993**, 32, 4450-4456	5.1	83
261	Synthesis of Intermetallic PtZn Nanoparticles by Reaction of Pt Nanoparticles with Zn Vapor and Their Application as Fuel Cell Catalysts. *Chemistry of Materials*, **2009**, 21, 2661-2667	9.6	82
260	Theoretical Studies of Carbonyl-Based Organic Molecules for Energy Storage Applications: The Heteroatom and Substituent Effect. *Journal of Physical Chemistry C*, **2014**, 118, 6046-6051	3.8	81

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255	In Situ X-ray Absorption Spectroscopy of a Synergistic Co-Mn Oxide Catalyst for the Oxygen Reduction Reaction. *Journal of the American Chemical Society*, **2019**, 141, 1463-1466	16.4	78
254	IrPdRu/C as H Oxidation Catalysts for Alkaline Fuel Cells. *Journal of the American Chemical Society*, **2017**, 139, 6807-6810	16.4	77
253	Observation of electroluminescence and photovoltaic response in ionic junctions. *Science*, **2006**, 313, 1416-9	33.3	76
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250	Semiconductor electrodes. 40. Photoassisted hydrogen evolution at poly(benzyl viologen)-coated p-type silicon electrodes. *Journal of the American Chemical Society*, **1981**, 103, 6898-6901	16.4	75
249	Cobalt-Based Nitride-Core Oxide-Shell Oxygen Reduction Electrocatalysts. *Journal of the American Chemical Society*, **2019**, 141, 19241-19245	16.4	74
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246	Identical Location Transmission Electron Microscopy Imaging of Site-Selective Pt Nanocatalysts: Electrochemical Activation and Surface Disordering. *Journal of the American Chemical Society*, **2015**, 137, 14992-8	16.4	70
245	Mechanistic Studies of Formate Oxidation on Platinum in Alkaline Medium. *Journal of Physical Chemistry C*, **2012**, 116, 5810-5820	3.8	69
244	Copper-Induced Formation of Structurally Ordered PtFeCu Ternary Intermetallic Electrocatalysts with Tunable Phase Structure and Improved Stability. *Chemistry of Materials*, **2018**, 30, 5987-5995	9.6	68
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242	Dinuclear transition-metal terpyridine complexes with a dithienylcyclo- pentene bridge directed toward molecular electronic applications. *Inorganic Chemistry*, **2007**, 46, 10470-2	5.1	68

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236	Revealing the atomic ordering of binary intermetallics using in situ heating techniques at multilength scales. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 1974-1983	11.5	64
235	Membraneless, room-temperature, direct borohydride/cerium fuel cell with power density of over 0.25 W/cm2. *Journal of the American Chemical Society*, **2012**, 134, 6076-9	16.4	64
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233	Increasing the gravimetric energy density of organic based secondary battery cathodes using small radius cations (Li+ and Mg2+). *Journal of the American Chemical Society*, **2013**, 135, 14532-5	16.4	59
232	Tungsten based electrocatalyst for fuel cell applications. *Electrochemistry Communications*, **2007**, 9, 2128-2132	5.1	59
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230	Spontaneous incorporation of gold in palladium-based ternary nanoparticles makes durable electrocatalysts for oxygen reduction reaction. *Nature Communications*, **2016**, 7, 11941	17.4	58
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228	Electrocatalytic mechanism and kinetics of SOMs oxidation on ordered PtPb and PtBi intermetallic compounds: DEMS and FTIRS study. *Physical Chemistry Chemical Physics*, **2008**, 10, 3739-51	3.6	58
227	Interactions of benzyl viologen with surface-bound single- and double-stranded DNA. *Analytical Chemistry*, **2000**, 72, 4700-6	7.8	58
226	Structural Effects on the Oxidation of HCOOH by Bismuth-Modified Pt(111) Electrodes with (100) Monatomic Steps. *Langmuir*, **1999**, 15, 7325-7332	4	57
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216	Methanol electrooxidation on PtRu bulk alloys and carbon-supported PtRu nanoparticle catalysts: a quantitative DEMS study. *Langmuir*, **2009**, 25, 7725-35	4	53
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204	Self-Poisoning during BH4 Oxidation at Pt and Au, and in Situ Poison Removal Procedures for BH4 Fuel Cells. *Journal of Physical Chemistry C*, **2013**, 117, 1571-1581	3.8	48
203	Contact issues in electroluminescent devices from ruthenium complexes. *Applied Physics Letters*, **2004**, 84, 807-809	3.4	48
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201	Elucidation of the redox behavior of 2,5-dimercapto-1,3,4-thiadiazole (DMcT) at poly(3,4-ethylenedioxythiophene) (PEDOT)-modified electrodes and application of the DMcT-PEDOT composite cathodes to lithium/lithium ion batteries. *Langmuir*, **2006**, 22, 10554-63	4	47
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195	Electrochemical Hydrogen Evolution at Ordered Mo7Ni7. *ACS Catalysis*, **2017**, 7, 3375-3383	13.1	44
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