Real-space identification of intermolecular bonding with atomic force microscopy

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#	Paper	IF	Citations
341	ChromophoreProtein Interplay during the Phytochrome Photocycle Revealed by Step-Scan FTIR Spectroscopy.		
340	Critical assessment of the evidence for striped nanoparticles. **2014**, 9, e108482		34
339	The covalence and infrared spectra of cationic hydrogen bonds and dihydrogen bonds. **2014**, 13, 1450060		2
338	Modeling 1D structures on semiconductor surfaces: synergy of theory and experiment. **2014**, 26, 133001		13
337	Identification of overlapping but differential binding sites for the high-affinity CXCR3 antagonists NBI-74330 and VUF11211. **2014**, 85, 116-26		21
336	From Perylene to a 22-Ring Aromatic Hydrocarbon in One-Pot. **2014**, 126, 9150-9152		34
335	Biaxial aromatics with face-on/edge-on stacking adaptability: an STM/STS study of 1D nanowires assembled via rotatable ethynyls. **2014**, 50, 14093-6		11
334	Quantifying molecular stiffness and interaction with lateral force microscopy. *Science*, **2014**, 343, 1120-2	33.3	97
333	Intramolecular bonds resolved on a semiconductor surface. **2014**, 90,		27
332	Image correction for atomic force microscopy images with functionalized tips. **2014**, 89,		47
331	Spatial assignment of symmetry adapted perturbation theory interaction energy components: The atomic SAPT partition. **2014**, 141, 044115		58
330	Communication: atomic force detection of single-molecule nonlinear optical vibrational spectroscopy. **2014**, 140, 161107		6
329	Gradient and scattering forces in photoinduced force microscopy. **2014**, 90,		72
328	Investigating atomic contrast in atomic force microscopy and Kelvin probe force microscopy on ionic systems using functionalized tips. **2014**, 90,		51
327	Mapping the force field of a hydrogen-bonded assembly. **2014**, 5, 3931		122
326	Computerized Models of Carbohydrates. **2014**, 1-38		2
325	Simultaneous ground- and space-based observations of the plasmaspheric plume and reconnection. *Science*, **2014**, 343, 1122-5	33.3	88

324	The past, present, and future of molecular gels. What is the status of the field, and where is it going?. **2014**, 136, 7519-30		512
323	Real-space imaging of molecular structure and chemical bonding by single-molecule inelastic tunneling probe. *Science*, **2014**, 344, 885-8	33.3	134
322	Mechanism of high-resolution STM/AFM imaging with functionalized tips. **2014**, 90,		327
321	Characterizing the chiral index of a single-walled carbon nanotube. *Small*, **2014**, 10, 4586-605	11	15
320	Intermolecular contrast in atomic force microscopy images without intermolecular bonds. **2014**, 113, 186102		116
319	Bimolecular porous supramolecular networks deposited from solution on layered materials: graphite, boron nitride and molybdenum disulphide. **2014**, 50, 8882-5		23
318	Experiment and theory elucidate the multichannel predissociation dynamics of the HCl trimer: breaking up is hard to do. **2014**, 118, 8402-10		17
317	Characterization of Interactions Involving Bromine in 2,2-Dibromo-2,3-dihydroinden-1-one via Experimental Charge Density Analysis. **2014**, 14, 5477-5485		19
316	Exploring the CXCR3 Chemokine Receptor with Small-Molecule Antagonists and Agonists. **2014**, 119-185		4
315	High-resolution scanning tunneling microscopy imaging of Si(1 1 1)-7 □7 structure and intrinsic molecular states. **2014**, 26, 394001		4
314	Characteristics of hydrogen bond revealed from water clusters. **2014**, 68, 1		5
313	Surface-initiated self-healing of polymers in aqueous media. **2014**, 13, 867-72		361
312	Electronic and cationic spectroscopy of 9-hydroxy-9-fluorene carboxylic acid. **2014**, 118, 4982-7		5
311	Sample corrugation affects the apparent bond lengths in atomic force microscopy. **2014**, 8, 3006-14		52
310	From perylene to a 22-ring aromatic hydrocarbon in one-pot. **2014**, 53, 9004-6		85
309	What is a hydrogen bond? Resonance covalency in the supramolecular domain. **2014**, 15, 276-285		82
308	Using the first steps of hydration for the determination of molecular conformation of a single molecule. **2014**, 136, 13341-7		13
307	Intramolecular Force Contrast and Dynamic Current-Distance Measurements at Room Temperature. **2015**, 115, 066101		23

306	Intermolecular artifacts in probe microscope images of C60 assemblies. **2015**, 92,		8
305	Identifying tips for intramolecular NC-AFM imaging via in situ fingerprinting. **2014**, 4, 6678		14
304	CO tip functionalization in subatomic resolution atomic force microscopy. **2015**, 107, 163109		15
303	Nano-contact microscopy of supracrystals. **2015**, 6, 1229-36		2
302	Resolving Intra- and Inter-Molecular Structure with Non-Contact Atomic Force Microscopy. **2015**, 16, 19936-59		35
301	Extended halogen bonding between fully fluorinated aromatic molecules. **2015**, 9, 2574-83		99
300	A three-arm scaffold carrying affinity molecules for multiplex recognition imaging by atomic force microscopy: the synthesis, attachment to silicon tips, and detection of proteins. **2015**, 137, 7415-23		10
299	Design of Aromatic Helical Polymers for STM Visualization: Imaging of Single and Double Helices with a Pattern of π Stacking. **2015**, 127, 3140-3144		16
298	Hydrogen Bonding in Supramolecular Crystal Engineering. **2015**, 69-113		4
297	Development of NIR-II fluorescence image-guided and pH-responsive nanocapsules for cocktail drug delivery. **2015**, 8, 1932-1943		24
296	Origin of the Contrast Interpreted as Intermolecular and Intramolecular Bonds in Atomic Force Microscopy Images. *Journal of Physical Chemistry C*, **2015**, 119, 14195-14200	3.8	26
295	Single-chain polymer nanoparticles: Mimic the proteins. **2015**, 66, A11-A21		53
294	China at the forefront of chemical and materials sciences. **2015**, 2, 127-127		
293	From ice superlubricity to quantum friction: Electronic repulsivity and phononic elasticity. **2015**, 3, 294-319		16
292	Noncontact AFM Imaging of Atomic Defects on the Rutile TiO2(110) Surface. **2015**, 241-272		1
291	Determination methods for the anticancer drug dicycloplatin, a supramolecule assembled through hydrogen bonding. **2015**, 140, 2704-12		1
290	Direct visualization of concerted proton tunnelling in a water nanocluster. **2015**, 11, 235-239		102
289	An alternative interpretation of the ultracold methylhydroxycarbene rearrangement mechanism: cooperative effects. **2015**, 17, 7443-8		7

288	High-Resolution Model for Noncontact Atomic Force Microscopy with a Flexible Molecule on the Tip Apex. *Journal of Physical Chemistry C*, **2015**, 119, 1483-1488	3.8	29
287	Electronic delocalization in small water rings. **2015**, 17, 2987-90		17
286	The synthesis and STM/AFM imaging of 'olympicene' benzo[cd]pyrenes. **2015**, 21, 2011-8		28
285	Correlation between electron delocalization and structural planarization in small water rings. **2015**, 115, 817-819		4
284	Design of aromatic helical polymers for STM visualization: imaging of single and double helices with a pattern of □stacking. **2015**, 54, 3097-101		36
283	Towards single molecule switches. **2015**, 44, 2998-3022		237
282	Chemical structure imaging of a single molecule by atomic force microscopy at room temperature. **2015**, 6, 7766		65
281	Hydrated Proton Structure and Diffusion at Platinum Surfaces. *Journal of Physical Chemistry C*, **2015**, 119, 14675-14682	3.8	10
280	On-surface generation and imaging of arynes by atomic force microscopy. **2015**, 7, 623-8		149
279	Potential Paths for the Hydrogen-Bond Relaxing With (HO) Cluster Size. *Journal of Physical Chemistry C*, **2015**, 119, 16962-16971	3.8	22
278	Strong positive cooperativity in binding to the A3T3 repeat by Hoechst 33258 derivatives attaching the quinoline units at the end of a branched linker. **2015**, 23, 4583-4590		5
277	Rotational Spectromicroscopy: Imaging the Orbital Interaction between Molecular Hydrogen and an Adsorbed Molecule. **2015**, 114, 206101		23
276	Tunnelling junctions with additional degrees of freedom: An extended toolbox of scanning probe microscopy. **2015**, 90, 194-222		17
275	A Study of Adsorption Behavior of Single Water Molecule on the Surface of Polyhedral Oligomeric Silsesquioxanes. **2015**, 26, 541-550		
274	Simulated structure and imaging of NTCDI on Si(1´1´1)-7□7 : a combined STM, NC-AFM and DFT study. **2015**, 27, 054004		7
273	Imaging three-dimensional surface objects with submolecular resolution by atomic force microscopy. **2015**, 15, 2257-62		57
272	Microscopy of Model Membranes: Understanding How Bcl-2 Proteins Mediate Apoptosis. **2015**, 21, 63-97		1
271	Chemokines. **2015**,		4

270	In situ synthesis of a large area boron nitride/graphene monolayer/boron nitride film by chemical vapor deposition. **2015**, 7, 7574-9		48
269	Catalytic reaction processes revealed by scanning probe microscopy. [corrected]. *Accounts of Chemical Research*, **2015**, 48, 1524-31	24.3	22
268	Potential Paths for the Hydrogen-Bond Relaxing With (H2O)NCluster Size. **2015**, 150629002906004		
267	Nanostructured Surfaces of Doped Alkali Halides. **2015**, 303-326		
266	Potential Sites for Ice Nucleation on Aluminosilicate Clay Minerals and Related Materials. **2015**, 6, 3850-8		32
265	van der Waals-Induced Chromatic Shifts in Hydrogen-Bonded Two-Dimensional Porphyrin Arrays on Boron Nitride. **2015**, 9, 10347-55		32
264	Simultaneous nc-AFM/STM Measurements with Atomic Resolution. **2015**, 29-49		3
263	The investigation of ESPT for 2,8-diphenyl-3,7-dihydroxy-4H,6H-pyrano[3,2-g]-chromene-4,6-dione: single or double?. **2015**, 5, 73619-73625		73
262	Self-Assembly and Stability of Hydrogen-Bonded Networks of Bridged Triphenylamines on Au(111) and Cu(111). *Journal of Physical Chemistry C*, **2015**, 119, 25945-25955	3.8	11
261	Measuring the relative hydrogen-bonding strengths of alcohols in aprotic organic solvents. **2015**, 16, 160-8		18
260	An Advanced Nitrogen-Doped Graphene/Cobalt-Embedded Porous Carbon Polyhedron Hybrid for Efficient Catalysis of Oxygen Reduction and Water Splitting. **2015**, 25, 872-882		612
259	Behavior of Two-Dimensional Hydrogen-Bonded Networks under Shear Conditions: A First-Principles Molecular Dynamics Study. *Journal of Physical Chemistry C*, **2015**, 119, 350-364	3.8	8
258	Neural Plasticity and Memory: Is Memory Encoded in Hydrogen Bonding Patterns?. **2016**, 22, 9-18		10
257	Advanced atomic force microscopy techniques III. **2016**, 7, 1052-4		1
256	Orientation Angle of Molecules at Hexadecane-Water Interface Studied with Total Internal Reflection Second Harmonic Generation. **2016**, 29, 650-656		2
255	High-Throughput Determination of Statistical Structure Information for Horizontal Carbon Nanotube Arrays by Optical Imaging. **2016**, 28, 2018-23		8
254	Imaging van der Waals Interactions. **2016**, 7, 5205-5211		7
253	Mapping the electrostatic force field of single molecules from high-resolution scanning probe images. **2016**, 7, 11560		76

252	Triggering comprehensive enhancement in oxygen evolution reaction by using newly created solvent. **2016**, 6, 28456	10
251	Visualizing the orientational dependence of an intermolecular potential. **2016**, 7, 10621	8
250	The discovery of the hydrogen bond from p-Nitrothiophenol by Raman spectroscopy: Guideline for the thioalcohol molecule recognition tool. **2016**, 6, 31981	18
249	Exploring Molecules beyond CO as Tip Functionalizations in High-Resolution Noncontact Atomic Force Microscopy: A First Principles Approach. **2016**, 1, 1004-1009	4
248	Perspective: Structure and dynamics of water at surfaces probed by scanning tunneling microscopy and spectroscopy. **2016**, 145, 160901	32
247	AFM Imaging of Mercaptobenzoic Acid on Au(110): Submolecular Contrast with Metal Tips. **2016**, 7, 1984-90	14
246	First-Principles Atomic Force Microscopy Image Simulations with Density Embedding Theory. **2016**, 16, 3242-6	17
245	Mapping Buried Hydrogen-Bonding Networks. **2016**, 10, 5446-51	19
244	Time-resolved molecular imaging. **2016**, 49, 112001	33
243	Imaging single-molecule reaction intermediates stabilized by surface dissipation and entropy. **2016**, 8, 678-83	102
242	Functionalized hexagonal boron nitride nanomaterials: emerging properties and applications. **2016**, 45, 3989-4012	657
241	The Mendeleev-Meyer force project. **2016**, 8, 17400-17406	5
240	The influence of straight pore blockage on the selectivity of methanol to aromatics in nanosized Zn/ZSM-5: an atomic Cs-corrected STEM analysis study. **2016**, 6, 74797-74801	34
239	Computational simulation of subatomic-resolution AFM and STM images for graphene/hexagonal boron nitride heterostructures with intercalated defects. **2016**, 94,	5
238	Chirality recognition in concerted proton transfer process for prismatic water clusters. **2016**, 9, 2782-2795	13
237	Double hydrogen bond mediating self-assembly structure of cyanides on metal surface. **2016**, 499, 70-75	
236	Tuning charge and correlation effects for a single molecule on a graphene device. **2016**, 7, 13553	66
235	Why are Hydrogen Bonds Directional?. **2016**, 128, 1571-1577	16

234	The Suspension of Water Using a Superconductive Magnetic-Field and Its Features. **2016**, 26, 1-4		3
233	-Bond: he Chemistry-Biology -Bridge. **2016**, 1, 4520-4532		11
232	Submolecular Resolution Imaging of Molecules by Atomic Force Microscopy: The Influence of the Electrostatic Force. **2016**, 116, 096102		43
231	Scanning quantum dot microscopy: A quantitative method to measure local electrostatic potential near surfaces. **2016**, 55, 08NA04		5
230	Building Pentagons into Graphenic Structures by On-Surface Polymerization and Aromatic Cyclodehydrogenation of Phenyl-Substituted Polycyclic Aromatic Hydrocarbons. *Journal of Physical Chemistry C*, **2016**, 120, 17588-17593	3.8	21
229	Simulating atomic force microscope images with density functional theory: The role of nonclassical contributions to the force. **2016**, 94,		2
228	Molecular orbital analysis of the hydrogen bonded water dimer. **2016**, 6, 22099		36
227	Frequency shift, damping, and tunneling current coupling with quartz tuning forks in noncontact atomic force microscopy. **2016**, 94,		7
226	Hydrogen generation mechanism of BH4 spontaneous hydrolysis: A sight from ab initio calculation. **2016**, 41, 22668-22676		20
225	Repulsive tip tilting as the dominant mechanism for hydrogen bond-like features in atomic force microscopy imaging. **2016**, 108, 193102		16
224	In situ chemical vapor deposition of graphene and hexagonal boron nitride heterostructures. **2016**, 16, 1175-1191		28
223	Subsurface-Controlled Angular Rotation: Triphenylene Molecules on Au(111) Substrates. *Journal of Physical Chemistry C*, **2016**, 120, 1615-1622	3.8	16
222	Molecular Mechanisms of Ultrafiltration Membrane Fouling in Polymer-Flooding Wastewater Treatment: Role of Ions in Polymeric Fouling. **2016**, 50, 1393-402		39
221	Molecular-Scale Electronics: From Concept to Function. **2016**, 116, 4318-440		746
220	Calculating the Entropy Loss on Adsorption of Organic Molecules at Insulating Surfaces. *Journal of Physical Chemistry C*, **2016**, 120, 3913-3921	3.8	16
219	Two Dimensional Ice from First Principles: Structures and Phase Transitions. **2016**, 116, 025501		129
218	Water Structure. **2016**, 25-48		1
217	Submolecular Imaging by Noncontact Atomic Force Microscopy with an Oxygen Atom Rigidly Connected to a Metallic Probe. **2016**, 10, 1201-9		59

216	Atomic force microscope, molecular imaging, and analysis. **2016**, 29, 51-5		11
215	STM Study of Ketopantolactone/(R)-1-(1-Naphthyl)ethylamine Complexes on Pt(111): Comparison of Prochiral and Enantiomeric Ratios and Examination of the Contribution of CH□□OC Bonding. **2017**, 7, 1757-1765		8
214	Probing Intermolecular Coupled Vibrations between Two Molecules. **2017**, 118, 036801		17
213	Ultrahigh-resolution imaging of water networks by atomic force microscopy. **2017**, 8, 14313		70
212	Indications of chemical bond contrast in AFM images of a hydrogen-terminated silicon surface. **2017**, 8, 14222		25
211	Frontiers of supramolecular chemistry at solid surfaces. **2017**, 46, 2520-2542		155
210	The new competitive mechanism of hydrogen bonding interactions and transition process for the hydroxyphenyl imidazo [1, 2-a] pyridine in mixed liquid solution. **2017**, 7, 1574		19
209	Probing nanoscale oxygen ion motion in memristive systems. **2017**, 8, 15173		112
208	Chemical bond imaging using higher eigenmodes of tuning fork sensors in atomic force microscopy. **2017**, 110, 183102		16
207	Theoretical study on electronic and vibrational properties of hydrogen bonds in glycine-water clusters. *Chemical Physics Letters*, **2017**, 684, 53-59	2.5	15
206	Energetics competition in centrally four-coordinated water clusters and Raman spectroscopic signature for hydrogen bonding. **2017**, 7, 11680-11683		16
205	Imaging Successive Intermediate States of the On-Surface Ullmann Reaction on Cu(111): Role of the Metal Coordination. **2017**, 11, 4183-4190		58
204	Cooperation and competition between halogen bonding and van der Waals forces in supramolecular engineering at the aliphatic hydrocarbon/graphite interface: position and number of bromine group effects. **2017**, 9, 237-250		29
203	Near-Field Raman Spectroscopy with Aperture Tips. **2017**, 117, 5095-5109		42
202	London Dispersion Directs On-Surface Self-Assembly of [121]Tetramantane Molecules. **2017**, 11, 9459-9466		18
201	Motion-Based Multiple Object Tracking of Ultrasonic-Induced Nucleation: A Case Study of l-Glutamic Acid. **2017**, 17, 5007-5011		6
200	Imaging the halogen bond in self-assembled halogenbenzenes on silver. *Science*, **2017**, 358, 206-210	33.3	115
199	High resolution SPM imaging of organic molecules with functionalized tips. **2017**, 29, 343002		69

198	Insights into van der Waals interaction between nanotubes and planar surfaces. **2017**, 2, 35-39		0
197	Atomic force microscopy contrast with CO functionalized tips in hydrogen-bonded molecular layers: Does the real tip charge distribution play a role?. **2017**, 96,		11
196	Atomic-scale investigation of nuclear quantum effects of surface water: Experiments and theory. **2017**, 92, 203-239		16
195	Supramolecular self-assembly on the B-Si(111)-(□x□) R30° surface: From single molecules to multicomponent networks. **2017**, 72, 316-349		19
194	Hydrogen bonding characterization in water and small molecules. **2017**, 146, 244315		5
193	Unusually high electron density in an intermolecular non-bonding region: Role of metal substrate. **2017**, 28, 759-764		11
192	Direct observation of single-molecule hydrogen-bond dynamics with single-bond resolution. **2018**, 9, 807		56
191	Probing of sub-picometer vertical differential resolutions using cavity plasmons. **2018**, 9, 801		63
190	Rasterkraftmikroskopie f□ die molekulare Strukturaufkl□ung. **2018**, 130, 3950-3972		9
189	Atomic Force Microscopy for Molecular Structure Elucidation. **2018**, 57, 3888-3908		85
188	Quantitative assessment of intermolecular interactions by atomic force microscopy imaging using copper oxide tips. **2018**, 13, 371-375		51
187	Believe in the force. **2018**, 13, 358-359		1
186	Multiple heteroatom substitution to graphene nanoribbon. **2018**, 4, eaar7181		105
185	The electron density delocalization of hydrogen bond systems. **2018**, 3, 1428915		18
184	A physically crosslinked polydopamine/nanocellulose hydrogel as potential versatile vehicles for drug delivery and wound healing. **2018**, 188, 27-36		169
183	Abnormal phase transition between two-dimensional high-density liquid crystal and low-density crystalline solid phases. **2018**, 9, 198		5
182	Mechano-Based Transductive Sensing for Wearable Healthcare. *Small*, **2018**, 14, e1702933	11	66
181	Weakly perturbative imaging of interfacial water with submolecular resolution by atomic force microscopy. **2018**, 9, 122		68

180	Comprehensive facilitating of water oxidation reaction by ultrasonic attenuation of hydrogen-bonded structure of water. **2018**, 42, 381-389		3
179	Excited-State Proton Transfer Mechanism of 2,6-Diazaindoles⋯(HO) (n = 2-4) Clusters. **2018**, 122, 3988-3995		33
178	Hydrogen bonding cooperation in glycine-(water)n clusters studied by density functional theory calculations. **2018**, 118, e25556		
177	Interaction between perylene-derivated molecules observed by low temperature scanning tunneling microscopy. **2018**, 669, 87-94		3
176	Molecular Simulation on the Thermal Stability of Meta-Aramid Insulation Paper Fiber at Transformer Operating Temperature. *Polymers*, **2018**, 10,	4.5	22
175	The Mechanism of Adsorption, Diffusion, and Photocatalytic Reaction of Organic Molecules on TiO2 Revealed by Means of On-Site Scanning Tunneling Microscopy Observations. **2018**, 8, 616		4
174	An inverse problem in film/substrate indentation: extracting both the Young⁄ modulus and thickness of films. **2018**, 34, 1061-1071		1
173	The role of mechanical force on the kinetics and dynamics of electrochemical redox reactions on graphene. **2018**, 10, 17912-17923		4
172	Real-space pseudopotential calculations for simulating noncontact atomic force microscopy images. **2018**, 36, 04H102		4
171	Assigning the absolute configuration of single aliphatic molecules by visual inspection. **2018**, 9, 2420		24
170	Polydopamine/Cellulose Nanofibrils Composite Film as Potential Vehicle for Drug Delivery. **2018**, 3, 6852-6858		7
169	Corrections. *Nature*, **2018**, 555, 547	50.4	1
168	Self-assembly directed one-step synthesis of [4]radialene on Cu(100) surfaces. **2018**, 9, 3113		32
167	Interface Characterization and Control of 2D Materials and Heterostructures. **2018**, 30, e1801586		85
166	Real-space imaging with pattern recognition of a ligand-protected Ag nanocluster at sub-molecular resolution. **2018**, 9, 2948		16
165	How atomic imaging is being pushed to its limit. *Nature*, **2018**, 555, 545-547	50.4	8
164	Hydrogen Bonds and Life in the Universe. **2018**, 8,		21
163	High Resolution Imaging, Spectroscopy and Nuclear Quantum Effects of Interfacial Water. **2018**,		

162	Corrosion protection of Al(111) by 8-hydroxyquinoline: a comprehensive DFT study. **2018**, 20, 21474-21486	5
161	Copper-oxide tip functionalization for submolecular atomic force microscopy. **2018**, 54, 9874-9888	13
160	Symmetry breakdown of 4,4?-diamino-p-terphenyl on a Cu(111) surface by lattice mismatch. **2018**, 9, 3277	24
159	Diacetylene Linked Anthracene Oligomers Synthesized by One-Shot Homocoupling of Trimethylsilyl on Cu(111). **2018**, 12, 8791-8797	28
158	Functional Scanning Force Microscopy for Energy Nanodevices. **2018**, 30, e1802490	22
157	On simulation of local fluxes in molecular junctions. **2018**, 148, 204103	12
156	CoSe2/porous carbon shell composites as high-performance catalysts toward tri-iodide reduction in dye-sensitized solar cells. **2019**, 6, 2550-2557	13
155	Teaching chemistry through contemporary research versus using a historical approach. **2019**,	6
154	Reversible Oxidation of Blue Phosphorus Monolayer on Au(111). **2019**, 19, 5340-5346	21
153	Discrimination of Bond Order in Organic Molecules Using Noncontact Atomic Force Microscopy. **2019**, 19, 5562-5567	6
152	Similarities in Diverse Polycyclic Aromatic Hydrocarbons of Asphaltenes and Heavy Oils Revealed by Noncontact Atomic Force Microscopy: Aromaticity, Bonding, and Implications for Reactivity. **2019**, 39-65	7
151	Investigating ice surfaces formed near the freezing point in the vapor phase via atomic force microscopy. **2019**, 58, SIIA09	0
150	AIRBED: A Simplified Density Functional Theory Model for Physisorption on Surfaces. **2019**, 15, 5628-5634	5
149	The qPlus sensor, a powerful core for the atomic force microscope. **2019**, 90, 011101	113
148	Real-space observation on standing configurations of phenylacetylene on Cu (111) by scanning probe microscopy. **2019**, 28, 066801	0
147	Molecular Technology for One- and Two-Dimensional Materials on Surfaces. **2019**, 305-341	
146	Hydrogen Bond Directed 2D Materials at Modulated Interfaces. **2019**, 31-87	0
145	Bond-Level Imaging of the 3D Conformation of Adsorbed Organic Molecules Using Atomic Force Microscopy with Simultaneous Tunneling Feedback. **2019**, 122, 196101	12

144	The Hydrogen Bond and Beyond: Perspectives for Rotational Investigations of Non-Covalent Interactions. **2019**, 25, 11402-11411		60
143	Guide for Atomic Force Microscopy Image Analysis To Discriminate Heteroatoms in Aromatic Molecules. **2019**, 33, 4775-4780		27
142	Noninvasive Subcellular Imaging Using Atomic Force Acoustic Microscopy (AFAM). **2019**, 8,		3
141	Controlled Construction of Atomic Point Contact with 16 Quantized Conductance States in Oxide Resistive Switching Memory. **2019**, 1, 789-798		17
140	Halogen Bonding: A Halogen-Centered Noncovalent Interaction Yet to Be Understood. **2019**, 7, 40		77
139	Geometric imaging of borophene polymorphs with functionalized probes. **2019**, 10, 1642		44
138	Self-assembly of 8-; 5- and 2-hydroxylquinolines on Au(111) single crystal in perchloric acid. **2019**, 838, 212-220		
137	A theoretical exploration of the intermolecular interactions between resveratrol and water: a DFT and AIM analysis. **2019**, 25, 56		8
136	Direct Imaging of the Induced-Fit Effect in Molecular Self-Assembly. *Small*, **2019**, 15, e1804713	11	3
135	Unraveling a self-assembling mechanism of isomeric aminothiophenol on Ag dendrite by correlated SERS and matrix-free LDI-MS. **2019**, 411, 8081-8089		2
134	Molecular Identification, Bond Order Discrimination, and Apparent Intermolecular Features in Atomic Force Microscopy Studied with a Charge Density Based Method. **2019**, 13, 786-795		28
133	Probing Adsorption Configurations of Small Molecules on Surfaces by Single-Molecule Tip-Enhanced Raman Spectroscopy. **2019**, 20, 37-41		15
132	Structure and Interaction of Ionic Liquid Monolayer on Graphite from First-Principles. *Journal of Physical Chemistry C*, **2019**, 123, 618-624	3.8	8
131	Nature of Binding in Planar Halogen□Benzene Assemblies and Their Possible Visualization in Scanning Probe Microscopy. *Journal of Physical Chemistry C*, **2019**, 123, 8379-8386	3.8	3
130	Atomic Force Microscopy in Probing Tumor Physics for Nanomedicine. **2019**, 18, 83-113		10
129	Theoretical insights into excited-state process for the novel 2,3-bis[(4-diethylamino-2-hydroxybenzylidene)amino]but-2-enedinitrile system. **2020**, 67, 227-234		
128	Effects of solvents on the excited state intramolecular proton transfer and hydrogen bond mechanisms of alizarin and its isomers. *Journal of Molecular Liquids*, **2020**, 301, 112415	6	33
127	Weak Intermolecular CH□□N Hydrogen Bonding: Determination of CH-N Hydrogen-Bond Mediated Couplings by Solid-State NMR Spectroscopy and First-Principles Calculations. **2020**, 124, 560-572		9

126	Graphene Acoustic Phonon-Mediated Pseudo-Landau Levels Tailoring Probed by Scanning Tunneling Spectroscopy. *Small*, **2020**, 16, e1905202	11	2
125	Understanding the complexity of the structures in alcohol solutions by temperature-dependent near-infrared spectroscopy. **2020**, 229, 117864		6
124	Conformational analysis of xylobiose by DFT quantum mechanics. **2020**, 27, 1207-1224		8
123	Bond-level imaging of organic molecules using Q-controlled amplitude modulation atomic force microscopy. **2020**, 117, 131601		0
122	Understanding the Hydrogen-Bonded Clusters of Ammonia (NH) (= 3-6): Insights from the Electronic Structure Theory. **2020**, 5, 31724-31729		4
121	Quasi-One-Dimensional Free-Electron-Like States Selected by Intermolecular Hydrogen Bonds at the Glycine/Cu(100) Interface. **2020**, 37, 117301		
120	Dynamic behavior of OH and its atomic contrast with O adatom on the Ti site of TiO2(110) at 78 K by atomic force microscopy imaging. **2020**, 117, 051602		3
119	Multi-Channel Exploration of O Adatom on TiO(110) Surface by Scanning Probe Microscopy. **2020**, 10,		0
118	Directly linked metalloporphyrins: a quest for bio-inspired materials. **2020**, 1, 1895-1908		1
117	The partition principles for atomic-scale structures and their physical properties: application to the nonlinear optical crystal material KBeBOF. **2020**, 22, 19299-19306		3
116	Influences of supercritical carbon dioxide fluid on pore morphology of various rank coals: A review. **2020**, 38, 1267-1294		7
115	Metal Electrodes for Molecular Electronics. **2020**, 7-91		
114	Supramolecular Interactions in Single-Molecule Junctions. **2020**, 137-155		
113	. **2020**,		2
112	Imaging oxygen molecular adsorption and dissociation on the Ti site of rutile TiO(110) surface with real configuration at 78 K by atomic force microscopy. **2020**, 22, 19795-19801		1
111	8-Hydroxyquinoline complexes (Alq3) on Al(111): atomic scale structure, energetics and charge distribution. **2020**, 44, 15209-15222		2
110	Ultrahigh-resolution scanning microwave impedance microscopy of moir lattices and superstructures. **2020**, 6,		11
109	Noncontact atomic force microscopy: Bond imaging and beyond. **2020**, 75, 100509		7

108	On-surface chemical reactions characterised by ultra-high resolution scanning probe microscopy. **2020**, 49, 4189-4202		10
107	Excess spectroscopy and its applications in the study of solution chemistry. **2020**, 92, 1611-1626		16
106	Real-Space Imaging of a Single-Molecule Monoradical Reaction. **2020**, 142, 13550-13557		6
105	The definitive challenge of forming uncommon pseudo-□□H□ and C□□H□ hydrogen bonds on cyclic and cubic nonpolar hydrocarbons. *Journal of Physical Organic Chemistry*, **2020**, 33, e4098	2.1	
104	Three-dimensional graphene nanoribbons as a framework for molecular assembly and local probe chemistry. **2020**, 6, eaay8913		18
103	H2Pc and pentacene on Cu(110)-(2□)O: A combined STM and nc-AFM study. **2020**, 696, 121590		2
102	Bicomponent supramolecular self-assemblies studied with tip-enhanced Raman spectroscopy. **2021**, 52, 366-374		1
101	On-surface formation of metal-organic coordination networks with C?Ag?C and C=O?Ag interactions assisted by precursor self-assembly. **2021**, 154, 044703		6
100	Resistive Random Access Memory Device Physics and Array Architectures. **2021**, 319-343		0
99	Manifold dynamic non-covalent interactions for steering molecular assembly and cyclization. **2021**, 12, 11659-11667		3
98	Hydrogen bonded trimesic acid networks on Cu(111) reveal how basic chemical properties are imprinted in HR-AFM images. **2021**, 13, 18473-18482		0
97	Benchmarking atomically defined AFM tips for chemical-selective imaging. **2021**, 13, 13617-13623		1
96	Determining structural and chemical heterogeneities of surface species at the single-bond limit. *Science*, **2021**, 371, 818-822	33.3	32
95	Applications of atomic force microscopy-based imaging and force spectroscopy in assessing environmental interfacial processes. 1-32		3
94	Nickel-Based Single-Atom Catalyst toward Triiodide Reduction Reaction in Hybrid Photovoltaics. **2021**, 9, 4256-4261		3
93	Role of Intermolecular Interactions in the Catalytic Reaction of Formic Acid on Cu(111). *Small*, **2021**, 17, e2008010	11	2
92	Open the door to the atomic world by single-molecule atomic force microscopy. **2021**, 4, 1189-1223		2
91	Unveiling Adatoms in On-Surface Reactions: Combining Scanning Probe Microscopy with van't Hoff Plots. *Journal of Physical Chemistry C*, **2021**, 125, 9847-9854	3.8	5

90	A single-molecule van der Waals compass. *Nature*, **2021**, 592, 541-544	50.4	28
89	Self-Assembly of N,N?-Di(n-butyl)-1,3,8,10-tetramethylquinacridone Governed by Metallic Surface Features of a Ag(110) Substrate. *Journal of Physical Chemistry C*, **2021**, 125, 10151-10158	3.8	0
88	Scanning probe microscopy. **2021**, 1,		31
87	Hydrogen-bond donor and acceptor cooperative catalysis strategy for cyclic dehydration of diols to access O-heterocycles. **2021**, 7,		6
86	Electronic structures and properties of TiAl/Ti2AlNb heterogeneous interfaces: A comprehensive first-principles study. **2021**, 133, 107173		4
85	The Hydrogen Bond Effect on Excited State Mechanism for 2-Isopropyl Thioxanone in Protic Solvents: Experimental and Theoretical Investigation. *Journal of Molecular Liquids*, **2021**, 117012	6	1
84	Probing the Nature of Chemical Bonds by Atomic Force Microscopy. *Molecules*, **2021**, 26,	4.8	2
83	Reducing molecular simulation time for AFM images based on super-resolution methods. **2021**, 12, 775-785		1
82	A novel amplitude and frequency demodulation algorithm for frequency-modulation atomic force microscope. **2021**, 32, 125001		
81	Structure□Dynamic Function Relations of Asphaltenes. **2021**, 35, 13610-13632		5
80	A Solid Transformation into Carboxyl Dimers Based on a Robust Hydrogen-Bonded Organic Framework for Propyne/Propylene Separation. **2021**, 60, 25942-25948		8
79	Constructing covalent organic nanoarchitectures molecule by molecule via scanning probe manipulation. **2021**, 13, 1133-1139		3
78	A Solid Transformation into Carboxyl Dimers Based on a Robust Hydrogen-Bonded Organic Framework for Propyne/Propylene Separation.		2
77	Solvent effects on catalytic reactions and related phenomena at liquid-solid interfaces. **2021**, 76, 100541		6
76	Cellulose nanofibrils composite hydrogel with polydopamine@zeolitic imidazolate framework-8 encapsulated in used as efficient vehicles for controlled drug release. **2021**, 102, 343-350		7
75	The influence of intermolecular hydrogen bonds on single fluorescence mechanism of 1-hydroxy-11H-benzo [b]fluoren-11-one and 10-hydroxy-11H-benzo [b]fluoren-11-one. **2021**, 260, 119993		3
74	Substituents effect on the methanol-assisted excited-state intermolecular proton transfer of 7-Aminoquinoline: A theoretical study. *Journal of Molecular Liquids*, **2021**, 341, 116920	6	0
73	Imaging N 2-K, a Haber-Bosch Catalysis Precursor, at the Atomic Scale.		

72	Single hydrogen atom manipulation for reversible deprotonation of water on a rutile TiO2 (110) surface. **2021**, 4,	1
71	The Role of Methyl Groups in the Early Stage of Thermal Polymerization of Polycyclic Aromatic Hydrocarbons Revealed by Molecular Imaging. **2021**, 35, 2224-2233	12
70	Atomic-Scale Contrast Formation in AFM Images on Molecular Systems. **2015**, 173-194	3
69	Atomic Resolution on Molecules with Functionalized Tips. **2015**, 223-246	5
68	Superlubricity of Ice. **2016**, 203-243	2
67	Ultrafast electron diffraction imaging of gas-phase molecules. **2020**, 163-231	3
66	Bethe-Slater-curve-like behavior and interlayer spin-exchange coupling mechanisms in two-dimensional magnetic bilayers. **2020**, 102,	18
65	Simulating noncontact atomic force microscopy images. **2019**, 3,	5
64	Chemical and steric effects in simulating noncontact atomic force microscopy images of organic molecules on a Cu (111) substrate. **2020**, 4,	2
63	Consistency and variability of cocrystals containing positional isomers: the self-assembly evolution mechanism of supramolecular synthons of cresol-piperazine. **2019**, 6, 1064-1073	7
62	Breaking a dative bond with mechanical forces. **2021**, 12, 5635	9
61	Analytical chemistry: Behold... the hydrogen bond!.	
60	Introduction. **2014**, 661-669	
59	Pauli Principle in Probe Microscopy. **2015**, 1-24	1
58	Computerized Models of Carbohydrates. **2015**, 1397-1440	
57	Scanning Tunnelling Microscopy with Single Molecule Force Sensors. **2015**, 275-301	1
56	Approaching Strategies. **2016**, 455-477	
55	Chapter 4:Physisorbed Layers at Interfaces. **2016**, 168-251	

54	Submolecular-Resolution Imaging of Interfacial Water. **2018**, 43-71		
53	Scanning Probe Microscopy. **2018**, 23-41		
52	Electrical and vibrational properties of hydrogen bonds in glycine-water clusters. **2019**,		
51	Scanning Probe Microscopy From Surfaces to Single Atoms. 1-39		
50	Effects of subsurface charge on surface defect and adsorbate of rutile TiO2 (110). *Wuli Xuebao/Acta Physica Sinica*, **2020**, 69, 210701	0.6	2
49	Chapter 9. Remarks and Conclusions. **2020**, 441-452		
48	Chapter 4:Experimental Methods and Techniques. **2020**, 225-306		
47	Zero-point fluctuation of hydrogen bond in water dimer from ab initio molecular dynamics. **2020**, 29, 103101		
46	Water-solid interfaces probed by high-resolution atomic force microscopy. **2021**, 77, 100549		6
45	A new supramolecular natural product gel based on self-assembled pomolic acid from traditional Chinese medicine. **2022**, 46, 100583		1
44	Insights into Ionic Liquids: From Z-Bonds to Quasi-Liquids.. **2022**, 2, 543-561		3
43	Unraveling excited state dynamics and photophysical properties for a series of phenol-quinoline derivatives by controlling hydrogen bond geometry. **2022**, 427, 113799		3
42	Cu(110)?????????????????. **2022**,		
41	Experimental Analysis of Tip Vibrations at Higher Eigenmodes of QPlus Sensors for Atomic Force Microscopy.. *Nanotechnology*, **2021**,	3.4	0
40	Atomic Insight into the Interfacial Effect on the Molecular Solvation. *Journal of Physical Chemistry C* ,	3.8	0
39	Interactions between water and organic molecules or inorganic salts on surfaces. *Aggregate*,	22.9	
38	Exploring the ESIPT process and fluorescence properties of 2-(2?-Hydroxyaryl)benzazole derivatives by expanding the conjugation framework. *Chemical Physics Letters*, **2022**, 793, 139465	2.5	0
37	Advances in detection and regulation of surface-supported molecular quantum states. *Wuli Xuebao/Acta Physica Sinica*, **2022**, 71, 060701	0.6	

36	Intermolecular and surface forces in atomic-scale manufacturing. *International Journal of Extreme Manufacturing*, **2022**, 4, 022002	7.9	0
35	In-situ Raman spectral investigation into hydrogen bonding characteristics of supercritical water. *Journal of Molecular Liquids*, **2022**, 355, 118965	6	0
34	Intermolecular hydrogen-bonding-induced fluorescence of 3-hydroxyisonicotinealdehyde in different pH media. *Journal of Luminescence*, **2022**, 247, 118878	3.8	0
33	Molecular Dynamics Investigation of the Thermo-Mechanical Properties of the Moisture Invaded and Cross-Linked Epoxy System.. *Polymers*, **2021**, 14,	4.5	0
32	Characterisation and Interpretation of On-Surface Chemical Reactions Studied by Ultra-High-Resolution Scanning Probe Microscopy. **2022**, 9-42		
31	Imaging a Haber-Bosch catalysis precursor at the atomic scale. *Cell Reports Physical Science*, **2022**, 100865	6.1	
30	Single-molecule nano-optoelectronics: Insights from physics. *Reports on Progress in Physics*,	14.4	0
29	Beyond Electrical Conductance: Progress and Prospects in Single-Molecule Junctions. *Journal of Materials Chemistry C*,	7.1	0
28	The Development of iDPC-STEM and Its Application in Electron Beam Sensitive Materials. *Molecules* , **2022**, 27, 3829	4.8	0
27	Real-Space Investigation of the Multiple Halogen Bonds by Ultrahigh-Resolution Scanning Probe Microscopy. *Small*, 2202368	11	3
26	Supramolecular assemblies based on natural small molecules: Union would be effective. *Materials Today Bio*, **2022**, 15, 100327	9.9	1
25	Submolecular Insights into Interfacial Water by Hydrogen-Sensitive Scanning Probe Microscopy. *Accounts of Chemical Research*, **2022**, 55, 1680-1692	24.3	0
24	Effects of solvents on the excited state intramolecular proton transfer in 3-HTC. *Journal of Physical Organic Chemistry*,	2.1	
23	An Inquiry-Based Introduction to Atomic Force Microscopy Techniques through Optical Storage Disc Surface Imaging. *Journal of Chemical Education*,	2.4	0
22	Atomic imaging of zeolite-confined single molecules by electron microscopy. *Nature*,	50.4	7
21	Probing and Manipulating a Single Chemical Bond Using Scanning Probe Microscopy. *Microscopy and Microanalysis*, **2022**, 28, 902-903	0.5	
20	Tools shaping drug discovery and development. *Biophysics Reviews*, **2022**, 3, 031301	2.6	0
19	Advanced Atomic Force Microscopies and their Applications in Two-Dimensional Materials: A Review.		0

18	Molecular-level insights into the surface-induced assembly of functional bacterial amyloid. **2022**,	0
17	Multiple molecular interactions between alkyl groups and dissociated bromine atoms on Ag(111). **2022**, 24, 22191-22197	0
16	Extraction of Chemical Reactivity and Structural Relaxations of an Organic Dye from the Short-Range Interaction with a Molecular Probe. **2022**, 13, 8660-8665	2
15	Interface Engineering of Conjugated Polymer Based Composites for Photocatalysis.	0
14	Molybdenum-Single Atom Catalyst for High-Efficiency Cobalt(III)/(II)-Mediated Hybrid Photovoltaics. **2022**, 5, 12991-12998	0
13	Stereo-Recognition of Hydrogen Bond and Its Implications for Lignin Biomimetic Synthesis.	0
12	Theoretical study of excited state intramolecular proton transfer behavior for 2-phenyl,3-hydroxybenzo[g]quinolones and its derivative in the aprotic and protic solvents. **2023**, 811, 140215	0
11	Programming material properties by tuning intermolecular bonding. **2022**, 132, 210703	0
10	Unveiling the effect of solvent polarity on the excited state intramolecular proton transfer and hydrogen bond mechanisms of DHP.	0
9	Hydrogen-Bonding Interactions Using Excess Spectroscopy. **2023**, 123-144	0
8	Non-covalent interactions (NCIs) in π-conjugated functional materials: advances and perspectives.	2
7	Why much of Chemistry may be indisputably non-bonded?. **2022**, 43, 211-229	0
6	Flexible plasmonic nanocavities: a universal platform for the identification of molecular orientations. **2023**, 15, 6588-6595	0
5	A theoretical study on the excited state behavior of a series of novel triazole pyrimidine group fluorophores: ESIPT or ICT. **2023**, 297, 122706	0
4	Orbital selective 5f electron character, indication of Kondo effect, and subatomic features of single uranium atoms. **2023**, 107,	0
3	Observation of electron orbital signatures of single atoms within metal-phthalocyanines using atomic force microscopy. **2023**, 14,	0
2	Ultrafast Dynamics Revealed with Time-Resolved Scanning Tunneling Microscopy: A Review.	0
1	Investigation of ultrafast excited-state dynamics at the nanoscale with terahertz field-induced electron tunneling and photon emission. **2023**, 133, 110903	0