Karl Mandel

List of Publications by Year
in descending order

96 papers	1,987 citations	279798 23 h-index	289244 40 g-index
101 all docs	101 docs citations	101 times ranked	2610 citing authors

#	Article	IF	Citations
1	Supraparticles: Functionality from Uniform Structural Motifs. ACS Nano, 2018, 12, 5093-5120.	14.6	169
2	Pilot-scale removal and recovery of dissolved phosphate from secondary wastewater effluents with reusable ZnFeZr adsorbent @ Fe 3 O 4 /SiO 2 particles with magnetic harvesting. Water Research, 2017, 109, 77-87.	11.3	137
3	Phosphate recovery from wastewater using engineered superparamagnetic particles modified with layered double hydroxide ion exchangers. Water Research, 2013, 47, 5670-5677.	11.3	107
4	Layered double hydroxide ion exchangers on superparamagnetic microparticles for recovery of phosphate from waste water. Journal of Materials Chemistry A, 2013, 1, 1840-1848.	10.3	100
5	Superparamagnetic Luminescent MOF@Fe₃O₄/SiO₂ Composite Particles for Signal Augmentation by Magnetic Harvesting as Potential Water Detectors. ACS Applied Materials & Interfaces, 2016, 8, 5445-5452.	8.0	70
6	Removal of phosphonates from synthetic and industrial wastewater with reusable magnetic adsorbent particles. Water Research, 2018, 145, 608-617.	11.3	70
7	Synthesis and stabilisation of superparamagnetic iron oxide nanoparticle dispersions. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2011, 390, 173-178.	4.7	65
8	Modified Superparamagnetic Nanocomposite Microparticles for Highly Selective Hg^{II} or Cu^{II} Separation and Recovery from Aqueous Solutions. ACS Applied Materials & Interfaces, 2012, 4, 5633-5642.	8.0	62
9	The magnetic nanoparticle separation problem. Nano Today, 2012, 7, 485-487.	11.9	56
10	Composite materials combining multiple luminescent MOFs and superparamagnetic microparticles for ratiometric water detection. Journal of Materials Chemistry C, 2017, 5, 10133-10142.	5.5	56
11	Structural transformation of layered double hydroxides: an in situ TEM analysis. Npj 2D Materials and Applications, 2018, 2, .	7.9	53
12	Reusable superparamagnetic nanocomposite particles for magnetic separation of iron hydroxide precipitates to remove and recover heavy metal ions from aqueous solutions. Separation and Purification Technology, 2013, 109, 144-147.	7.9	46
13	Hollow carbon spheres in microwaves: Bio inspired absorbing coating. Applied Physics Letters, 2016, 108, .	3.3	43
14	Surfactant free superparamagnetic iron oxide nanoparticles for stable ferrofluids in physiological solutions. Chemical Communications, 2015, 51, 2863-2866.	4.1	39
15	Influence of cation building blocks of metal hydroxide precipitates on their adsorption and desorption capacity for phosphate in wastewaterâ€"A screening study. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2016, 488, 145-153.	4.7	38
16	Smart Optical Composite Materials: Dispersions of Metalâ€"Organic Framework@Superparamagnetic Microrods for Switchable Isotropicâ€"Anisotropic Optical Properties. ACS Nano, 2017, 11, 779-787.	14.6	37
17	Facile, fast, and inexpensive synthesis of monodisperse amorphous Nickel-Phosphide nanoparticles of predefined size. Chemical Communications, 2011, 47, 4108.	4.1	31
18	Nanostructured micro-raspberries from superparamagnetic iron oxide nanoparticles: Studying agglomeration degree and redispersibility of nanoparticulate powders via magnetisation measurements. Journal of Colloid and Interface Science, 2017, 505, 605-614.	9.4	31

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19	Supraparticles for Sustainability. Advanced Functional Materials, 2021, 31, 2011089.	14.9	31
20	Expanding the Horizon of Mechanochromic Detection by Luminescent Shear Stress Sensor Supraparticles. Advanced Functional Materials, 2019, 29, 1901193.	14.9	28
21	Pushing up the magnetisation values for iron oxide nanoparticles via zinc doping: X-ray studies on the particle's sub-nano structure of different synthesis routes. Physical Chemistry Chemical Physics, 2016, 18, 25221-25229.	2.8	27
22	Stabilisation effects of superparamagnetic nanoparticles on clustering in nanocomposite microparticles and on magnetic behaviour. Journal of Magnetism and Magnetic Materials, 2013, 331, 269-275.	2.3	25
23	Supraparticles with a Magnetic Fingerprint Readable by Magnetic Particle Spectroscopy: An Alternative beyond Optical Tracers. Advanced Materials Technologies, 2019, 4, 1900300.	5.8	25
24	Floating hollow carbon spheres for improved solar evaporation. Carbon, 2019, 146, 232-247.	10.3	22
25	Luminescent Supraparticles Based on CaF‹sub›2‹/sub›â€“Nanoparticle Building Blocks as Code Objects with Unique IDs. ACS Applied Nano Materials, 2020, 3, 734-741.	5.0	22
26	Polycarboxylate ethers: The key towards non-toxic TiO 2 nanoparticle stabilisation in physiological solutions. Colloids and Surfaces B: Biointerfaces, 2016, 143, 7-14.	5.0	21
27	A mechanism to explain the creep behavior of gypsum plaster. Cement and Concrete Research, 2017, 98, 122-129.	11.0	20
28	Anisotropic Magnetic Supraparticles with a Magnetic Particle Spectroscopy Fingerprint as Indicators for Cold-Chain Breach. ACS Applied Nano Materials, 2019, 2, 4698-4702.	5.0	20
29	Towards core-shell bifunctional catalyst particles for aqueous metal-air batteries: NiFe-layered double hydroxide nanoparticle coatings on Î³-MnO 2 microparticles. Electrochimica Acta, 2017, 231, 216-222.	5.2	18
30	Nanostructured ZnFeZr oxyhydroxide precipitate as efficient phosphate adsorber in waste water: understanding the role of different material-building-blocks. Environmental Science: Nano, 2017, 4, 180-190.	4.3	18
31	A Single Magnetic Particle with Nearly Unlimited Encoding Options. Small, 2021, 17, e2101588.	10.0	18
32	Colorful Luminescent Magnetic Supraparticles: Expanding the Applicability, Information Capacity, and Security of Micrometerâ€Scaled Identification Taggants by Dualâ€Spectral Encoding. Small, 2022, 18, e2107511.	10.0	18
33	Burstable nanostructured micro-raspberries: Towards redispersible nanoparticles from dry powders. Journal of Colloid and Interface Science, 2017, 490, 401-409.	9.4	17
34	Screen printed bifunctional gas diffusion electrodes for aqueous metal-air batteries: Combining the best of the catalyst and binder world. Electrochimica Acta, 2017, 258, 495-503.	5.2	16
35	Abrasion Indicators for Smart Surfaces Based on a Luminescence Turnâ€On Effect in Supraparticles. Advanced Photonics Research, 2020, 1, 2000023.	3.6	16
36	Continuous flow synthesis and cleaning of nano layered double hydroxides and the potential of the route to adjust round or platelet nanoparticle morphology. RSC Advances, 2016, 6, 57236-57244.	3.6	15

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37	A magnetically induced fluidized-bed reactor for intensification of electrochemical reactions. Chemical Engineering Journal, 2020, 385, 123845.	12.7	15
38	A Supraparticleâ€Based Fiveâ€Levelâ€Identification Tag That Switches Information Upon Readout. Advanced Optical Materials, 2021, 9, 2001972.	7.3	15
39	Communicating Particles: Identification Taggant and Temperature Recorder in One Single Supraparticle. Advanced Functional Materials, 2021, 31, 2104189.	14.9	15
40	Nitric acid-stabilized superparamagnetic iron oxide nanoparticles studied with X-rays. Journal of Nanoparticle Research, 2012, 14, 1.	1.9	14
41	Reusable Superparamagnetic Raspberryâ€Like Supraparticle Adsorbers as Instant Cleaning Agents for Ultrafast Dye Removal from Water. ChemNanoMat, 2019, 5, 230-240.	2.8	14
42	Oxidative Precipitation as a Versatile Method to Obtain Ferromagnetic Fe₃O₄ Nanoâ€•and Mesocrystals Adjustable in Morphology and Magnetic Properties. Particle and Particle Systems Characterization, 2021, 38, 2000307.	2.3	14
43	Centrifugation based separation of lithium iron phosphate (LFP) and carbon black for lithium-ion battery recycling. Chemical Engineering and Processing: Process Intensification, 2021, 160, 108310.	3.6	14
44	Size controlled iron oxide nano octahedra obtained via sonochemistry and natural ageing. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 457, 27-32.	4.7	12
45	Indicator Supraparticles for Smart Gasochromic Sensor Surfaces Reacting Ultrafast and Highly Sensitive. Particle and Particle Systems Characterization, 2019, 36, 1900254.	2.3	12
46	Supraparticles with silica protection for redispersible, calcined nanoparticles. Nanoscale Advances, 2019, 1, 4277-4281.	4.6	12
47	Reversible magnetism switching of iron oxide nanoparticle dispersions by controlled agglomeration. Nanoscale Advances, 2021, 3, 2822-2829.	4.6	12
48	Supraparticles for Bareâ€Eye H₂ Indication and Monitoring: Design, Working Principle, and Molecular Mobility. Advanced Functional Materials, 2022, 32, .	14.9	12
49	Coatings with a Mole-hill Structure of Nanoparticle-Raspberry Containers for Surfaces with Abrasion-Refreshable Reservoir Functionality. ACS Applied Materials & Interfaces, 2015, 7, 24909-24914.	8.0	11
50	Hollow Superparamagnetic Nanoparticle-Based Microballoons for Mechanical Force Monitoring by Magnetic Particle Spectroscopy. ACS Applied Nano Materials, 2019, 2, 6757-6762.	5.0	11
51	Highly sensitive reflection based colorimetric gas sensor to detect CO in realistic fire scenarios. Sensors and Actuators B: Chemical, 2020, 306, 127572.	7.8	11
52	Electrical conductivity of magnetically stabilized fluidized-bed electrodes â€“ Chronoamperometric and impedance studies. Chemical Engineering Journal, 2020, 396, 125326.	12.7	11
53	An all white magnet by combination of electronic properties of a white light emitting MOF with strong magnetic particle systems. Journal of Materials Chemistry C, 2020, 8, 16010-16017.	5.5	10
54	Luminescent magnets: hybrid supraparticles of a lanthanide-based MOF and ferromagnetic iron oxide by assembly in a droplet via spray-drying. Journal of Materials Chemistry C, 2022, 10, 1017-1028.	5.5	10

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55	Recording Temperature with Magnetic Supraparticles. Advanced Materials, 2022, 34, .	21.0	10
56	Smart Surfaces: Magnetically Switchable Light Diffraction through Actuation of Superparamagnetic Plateâ€Like Microrods by Dynamic Magnetic Stray Field Landscapes. Advanced Optical Materials, 2018, 6, 1800133.	7.3	9
57	Magnetic Carbon Composite Particles for Dye Adsorption from Water and their Electrochemical Regeneration. Particle and Particle Systems Characterization, 2019, 36, 1800537.	2.3	9
58	Real-time monitoring of magnetic nanoparticle-assisted nanoplastic agglomeration and separation from water. Environmental Science: Nano, 2022, 9, 2427-2439.	4.3	9
59	Air bubble promoted large scale synthesis of luminescent ZnO nanoparticles. Journal of Materials Chemistry C, 2015, 3, 12430-12435.	5.5	8
60	The Significant Influence of the pH Value on Citrate Coordination upon Modification of Superparamagnetic Iron Oxide Nanoparticles. Particle and Particle Systems Characterization, 2022, 39, .	2.3	8
61	Customised transition metal oxide nanoparticles for the controlled production of carbon nanostructures. RSC Advances, 2012, 2, 3748.	3.6	7
62	Coreâ€“Satellite Supraparticles To Ballistically Stamp Nanostructures on Surfaces. ACS Applied Materials & Interfaces, 2018, 10, 14183-14192.	8.0	7
63	Mechanochemical surface functionalisation of superparamagnetic microparticles with in situ formed crystalline metal-complexes: a fast novel coreâ€“shell particle formation method. Chemical Communications, 2015, 51, 8687-8690.	4.1	6
64	Hollow Superparamagnetic Microballoons from Lifelike, Self-Directed Pickering Emulsions Based on Patchy Nanoparticles. ACS Nano, 2016, 10, 10347-10356.	14.6	6
65	Versatile triggered substance release systems via a highly flexible high throughput encapsulation technique. Applied Materials Today, 2018, 11, 231-237.	4.3	6
66	Quantifying Surface Properties of Silica Particles by Combining Hansen Parameters and Reichardt's Dye Indicator Data. Particle and Particle Systems Characterization, 2018, 35, 1800328.	2.3	6
67	Discovering the Determining Parameters for the Photocatalytic Activity of TiO₂ Colloids Based on an Anomalous Dependence on the Specific Surface Area. Particle and Particle Systems Characterization, 2018, 35, 1800216.	2.3	6
68	Silanization of Silica Nanoparticles and Their Processing as Nanostructured Microâ€Raspberry Powdersâ€”A Route to Control the Mechanical Properties of Isoprene Rubber Composites. Polymer Composites, 2019, 40, E732.	4.6	6
69	Raspberry-like supraparticles from nanoparticle building-blocks as code-objects for hidden signatures readable by terahertz rays. Materials Today Communications, 2018, 16, 174-177.	1.9	5
70	Tailored Nanoparticles by Wet Chemical Particle Technology. , 2018, , 137-150.		5
71	A code with a twist: supraparticle microrod composites with direction dependent optical properties as anti-counterfeit labels. Nanoscale Advances, 2019, 1, 1510-1515.	4.6	5
72	Overcoming the Inhibition Effects of Citrate: Precipitation of Ferromagnetic Magnetite Nanoparticles with Tunable Morphology, Magnetic Properties, and Surface Charge via Ferrous Citrate Oxidation. Particle and Particle Systems Characterization, 2021, 38, 2100098.	2.3	5

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73	Hybrid Inorganicâ€“Organic Luminescent Supraparticle Taggants with Switchable Dualâ€Level ID. Advanced Optical Materials, 2022, 10, .	7.3	5
74	Optically Sensitive and Magnetically Identifiable Supraparticles as Indicators of Surface Abrasion. Nano Letters, 2022, 22, 2762-2768.	9.1	5
75	Supraparticles with a Mechanically Triggerable Colorâ€Changeâ€Effect to Equip Coatings with the Ability to Report Damage. Small, 2022, 18, e2107513.	10.0	5
76	Facile synthesis of magnetic nanoparticles optimized towards high heating rates upon magnetic induction. Journal of Magnetism and Magnetic Materials, 2019, 488, 165350.	2.3	4
77	Adsorber Particles with Magneticallyâ€Supported Improved Electrochemical Conversion Behavior for Waste Water Treatment Processes. Particle and Particle Systems Characterization, 2020, 37, 1900487.	2.3	4
78	Polishing of secondary wastewater effluents through elimination and recovery of dissolved phosphorus with reusable magnetic microsorbents. Proceedings of the Water Environment Federation, 2017, 2017, 169-181.	0.0	4
79	Revealing the working principle of sodium trimetaphosphate as state of the art anti-creep agent in gypsum plaster. Cement and Concrete Research, 2018, 107, 182-187.	11.0	3
80	Colloidal Coreâ€“Satellite Supraparticles via Preprogramed Burst of Nanostructured Microâ€Raspberry Particles. Particle and Particle Systems Characterization, 2018, 35, 1800096.	2.3	3
81	Abrasive Blasting of Lithium Metal Surfaces Yields Clean and 3Dâ€Structured Lithium Metal Anodes with Superior Properties. Energy Technology, 2021, 9, 2100455.	3.8	3
82	Sprayâ€Drying and Atomic Layer Deposition: Complementary Tools toward Fully Orthogonal Control of Bulk Composition and Surface Identity of Multifunctional Supraparticles. Small Methods, 2022, 6, e2101296.	8.6	3
83	Fingerprint signatures based on nanomagnets as markers in materials for tracing and counterfeit protection. Journal of Nanoparticle Research, 2016, 18, 1.	1.9	2
84	Spectroscopic Study of the Role of Metal Ions in the Adsorption Process of Phosphate in Nanoscaled Adsorbers Based on Metal (Zn/Fe/Zr) Oxyhydroxides. Journal of Physical Chemistry C, 2017, 121, 25033-25042.	3.1	1
85	Sensors: Expanding the Horizon of Mechanochromic Detection by Luminescent Shear Stress Sensor Supraparticles (Adv. Funct. Mater. 19/2019). Advanced Functional Materials, 2019, 29, 1970129.	14.9	1
86	Modulation of Crystallinity and Optical Properties in Composite Materials Combining Iron Oxide Nanoparticles and Dye-Containing Covalent Organic Frameworks. Organic Materials, 2021, 03, 017-024.	2.0	1
87	Communicating Particles: Identification Taggant and Temperature Recorder in One Single Supraparticle (Adv. Funct. Mater. 34/2021). Advanced Functional Materials, 2021, 31, 2170251.	14.9	1
88	Supraparticles for Bareâ€Eye H₂ Indication and Monitoring: Design, Working Principle, and Molecular Mobility (Adv. Funct. Mater. 22/2022). Advanced Functional Materials, 2022, 32, .	14.9	1
89	Functional superparamagnetic supraparticles and their application towards water treatment and smart surfaces. Chemie-Ingenieur-Technik, 2018, 90, 1203-1203.	0.8	0
90	Abrasion Indicators for Smart Surfaces Based on a Luminescence Turnâ€On Effect in Supraparticles. Advanced Photonics Research, 2020, 1, 2070002.	3.6	0

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91	Supraparticles: Supraparticles for Sustainability (Adv. Funct. Mater. 11/2021). Advanced Functional Materials, 2021, 31, 2170073.	14.9	0
92	A Simple Model Setup Using Sprayâ€Drying Principles and Fluorescent Silica Nanoparticles to Evaluate the Efficiency of Facemask Materials in Terms of Virus Particle Retention. Advanced Materials Technologies, 2021, 6, 2100235.	5.8	0
93	Magnetic Supraparticles: A Single Magnetic Particle with Nearly Unlimited Encoding Options (Small) Tj ETQq1 1 0.784314 rgBT /Overlock	10.0	0
94	Overcoming the Inhibition Effects of Citrate: Precipitation of Ferromagnetic Magnetite Nanoparticles with Tunable Morphology, Magnetic Properties, and Surface Charge via Ferrous Citrate Oxidation (Part. Part. Syst. Charact. 8/2021). Particle and Particle Systems Characterization, 2021, 38, 2170019.	2.3	0
95	Materialien: Magnetische Marker. Nachrichten Aus Der Chemie, 2021, 69, 45-47.	0.0	0
96	Sprayâ€Drying and Atomic Layer Deposition: Complementary Tools toward Fully Orthogonal Control of Bulk Composition and Surface Identity of Multifunctional Supraparticles (Small Methods 1/2022). Small Methods, 2022, 6, .	8.6	0