Monika sterberg

List of Publications by Year in Descending Order

135 papers	7,872 citations	42 h-index	86 g-index
144 ext. papers	9,161 ext. citations	6.6 avg, IF	6.23 L-index

#	Paper	IF	Citations
135	Synthesis of an Azide- and Tetrazine-Functionalized [60]Fullerene and Its Controlled Decoration with Biomolecules.. *ACS Omega*, **2022**, 7, 1329-1336	3.9	0
134	High-resolution 3D printing of xanthan gum/nanocellulose bio-inks.. *International Journal of Biological Macromolecules*, **2022**,	7.9	2
133	3D printing and properties of cellulose nanofibrils-reinforced quince seed mucilage bio-inks. *International Journal of Biological Macromolecules*, **2021**, 192, 1098-1107	7.9	4
132	Experimental and Simulation Study of the Solvent Effects on the Intrinsic Properties of Spherical Lignin Nanoparticles. *Journal of Physical Chemistry B*, **2021**, 125, 12315-12328	3.4	1
131	Lignin-Based Porous Supraparticles for Carbon Capture. *ACS Nano*, **2021**, 15, 6774-6786	16.7	13
130	Cytokeratin 5 determines maturation of the mammary myoepithelium. *IScience*, **2021**, 24, 102413	6.1	2
129	Towards sustainable production and utilization of plant-biomass-based nanomaterials: a review and analysis of recent developments. *Biotechnology for Biofuels*, **2021**, 14, 114	7.8	22
128	Toward waste valorization by converting bioethanol production residues into nanoparticles and nanocomposite films. *Sustainable Materials and Technologies*, **2021**, 28, e00269	5.3	4
127	Skin and bubble formation in films made of methyl nanocellulose, hydrophobically modified ethyl(hydroxyethyl)cellulose and microfibrillated cellulose. *Cellulose*, **2021**, 28, 787-797	5.5	3
126	Effect of laminin, polylysine and cell medium components on the attachment of human hepatocellular carcinoma cells to cellulose nanofibrils analyzed by surface plasmon resonance. *Journal of Colloid and Interface Science*, **2021**, 584, 310-319	9.3	6
125	Solvent-Resistant Lignin-Epoxy Hybrid Nanoparticles for Covalent Surface Modification and High-Strength Particulate Adhesives. *ACS Nano*, **2021**, 15, 4811-4823	16.7	30
124	Colloidal Lignin Particles and Epoxies for Bio-Based, Durable, and Multiresistant Nanostructured Coatings. *ACS Applied Materials & Interfaces*, **2021**, 13, 34793-34806	9.5	4
123	Modelling aerosol transport and virus exposure with numerical simulations in relation to SARS-CoV-2 transmission by inhalation indoors. *Safety Science*, **2020**, 130, 104866	5.8	193
122	Non-leaching, Highly Biocompatible Nanocellulose Surfaces That Efficiently Resist Fouling by Bacteria in an Artificial Dermis Model.. *ACS Applied Bio Materials*, **2020**, 3, 4095-4108	4.1	4
121	Lignin-fatty acid hybrid nanocapsules for scalable thermal energy storage in phase-change materials. *Chemical Engineering Journal*, **2020**, 393, 124711	14.7	33
120	Agglomeration of Viruses by Cationic Lignin Particles for Facilitated Water Purification. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 4167-4177	8.3	35
119	AFM Force Spectroscopy Reveals the Role of Integrins and Their Activation in Cell-Biomaterial Interactions.. *ACS Applied Bio Materials*, **2020**, 3, 1406-1417	4.1	6

118	Spherical lignin particles: a review on their sustainability and applications. *Green Chemistry*, **2020**, 22, 2712-2733	10	114
117	Moisture-related changes in the nanostructure of woods studied with X-ray and neutron scattering. *Cellulose*, **2020**, 27, 71-87	5.5	20
116	Self-assembly of colloidal lignin particles in a continuous flow tubular reactor. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2020**, 587, 124228	5.1	10
115	Three-Dimensional Printed Cell Culture Model Based on Spherical Colloidal Lignin Particles and Cellulose Nanofibril-Alginate Hydrogel. *Biomacromolecules*, **2020**, 21, 1875-1885	6.9	38
114	Well-Defined Lignin Model Films from Colloidal Lignin Particles. *Langmuir*, **2020**, 36, 15592-15602	4	12
113	Bundling of cellulose microfibrils in native and polyethylene glycol-containing wood cell walls revealed by small-angle neutron scattering. *Scientific Reports*, **2020**, 10, 20844	4.9	7
112	Lignin nanoparticles modified with tall oil fatty acid for cellulose functionalization. *Cellulose*, **2020**, 27, 273-284	5.5	18
111	Open coating with natural wax particles enables scalable, non-toxic hydrophobation of cellulose-based textiles. *Carbohydrate Polymers*, **2020**, 227, 115363	10.3	14
110	Lignin for Nano- and Microscaled Carrier Systems: Applications, Trends, and Challenges. *ChemSusChem*, **2019**, 12, 2038-2038	8.3	8
109	Phospholipid-Based Reverse Micelle Structures in Vegetable Oil Modified by Water Content, Free Fatty Acid, and Temperature. *Langmuir*, **2019**, 35, 8373-8382	4	4
108	Natural Shape-Retaining Microcapsules With Shells Made of Chitosan-Coated Colloidal Lignin Particles. *Frontiers in Chemistry*, **2019**, 7, 370	5	39
107	Preparation and Characterization of Dentin Phosphophoryn-Derived Peptide-Functionalized Lignin Nanoparticles for Enhanced Cellular Uptake. *Small*, **2019**, 15, e1901427	11	41
106	Quantified forces between HepG2 hepatocarcinoma and WA07 pluripotent stem cells with natural biomaterials correlate with in vitro cell behavior. *Scientific Reports*, **2019**, 9, 7354	4.9	8
105	Surface Engineered Biomimetic Inks Based on UV Cross-Linkable Wood Biopolymers for 3D Printing. *ACS Applied Materials & Interfaces*, **2019**, 11, 12389-12400	9.5	40
104	Lignin for Nano- and Microscaled Carrier Systems: Applications, Trends, and Challenges. *ChemSusChem*, **2019**, 12, 2039-2054	8.3	117
103	Dehydroabietylamine-Based Cellulose Nanofibril Films: A New Class of Sustainable Biomaterials for Highly Efficient, Broad-Spectrum Antimicrobial Effects. *ACS Sustainable Chemistry and Engineering*, **2019**, 7, 5002-5009	8.3	6
102	Antimicrobial Colloidal Silver□lignin Particles via Ion and Solvent Exchange. *ACS Sustainable Chemistry and Engineering*, **2019**, 7, 15297-15303	8.3	11
101	Aqueous Ammonia Pre-treatment of Wheat Straw: Process Optimization and Broad Spectrum Dye Adsorption on Nitrogen-Containing Lignin. *Frontiers in Chemistry*, **2019**, 7, 545	5	8

100	Understanding hemicellulose-cellulose interactions in cellulose nanofibril-based composites. *Journal of Colloid and Interface Science*, **2019**, 555, 104-114	9.3	14
99	Small-angle scattering model for efficient characterization of wood nanostructure and moisture behaviour. *Journal of Applied Crystallography*, **2019**, 52, 369-377	3.8	19
98	Strong, Ductile, and Waterproof Cellulose Nanofibril Composite Films with Colloidal Lignin Particles. *Biomacromolecules*, **2019**, 20, 693-704	6.9	114
97	A fast method to prepare mechanically strong and water resistant lignocellulosic nanopapers. *Carbohydrate Polymers*, **2019**, 203, 148-156	10.3	26
96	Quantifying the interactions between biomimetic biomaterials - collagen I, collagen IV, laminin 521 and cellulose nanofibrils - by colloidal probe microscopy. *Colloids and Surfaces B: Biointerfaces*, **2019** , 173, 571-580	6	16
95	Closed cycle production of concentrated and dry redispersible colloidal lignin particles with a three solvent polarity exchange method. *Green Chemistry*, **2018**, 20, 843-850	10	53
94	Enzymatically and chemically oxidized lignin nanoparticles for biomaterial applications. *Enzyme and Microbial Technology*, **2018**, 111, 48-56	3.8	45
93	Eco-friendly Flame-Retardant Cellulose Nanofibril Aerogels by Incorporating Sodium Bicarbonate. *ACS Applied Materials & Interfaces*, **2018**, 10, 27407-27415	9.5	60
92	Stereoselectively water resistant hybrid nanopapers prepared by cellulose nanofibers and water-based polyurethane. *Carbohydrate Polymers*, **2018**, 199, 286-293	10.3	6
91	Spatially confined lignin nanospheres for biocatalytic ester synthesis in aqueous media. *Nature Communications*, **2018**, 9, 2300	17.4	78
90	Surface tailoring and design-driven prototyping of fabrics with 3D-printing: An all-cellulose approach. *Materials and Design*, **2018**, 140, 409-419	8.1	37
89	Understanding the interactions of cellulose fibres and deep eutectic solvent of choline chloride and urea. *Cellulose*, **2018**, 25, 137-150	5.5	40
88	Aggregation response of triglyceride hydrolysis products in cyclohexane and triolein. *Physical Chemistry Chemical Physics*, **2018**, 20, 27192-27204	3.6	5
87	Emulsion Stabilization with Functionalized Cellulose Nanoparticles Fabricated Using Deep Eutectic Solvents. *Molecules*, **2018**, 23,	4.8	18
86	Techno-economic assessment for the large-scale production of colloidal lignin particles. *Green Chemistry*, **2018**, 20, 4911-4919	10	34
85	Colloidal Lignin Particles as Adhesives for Soft Materials. *Nanomaterials*, **2018**, 8,	5.4	20
84	Multi-layer nanopaper based composites. *Cellulose*, **2017**, 24, 1759-1773	5.5	15
83	Layer-by-layer assembled hydrophobic coatings for cellulose nanofibril films and textiles, made of polylysine and natural wax particles. *Carbohydrate Polymers*, **2017**, 173, 392-402	10.3	53

82	Understanding the mechanisms of oxygen diffusion through surface functionalized nanocellulose films. *Carbohydrate Polymers*, **2017**, 174, 309-317	10.3	23
81	Effect of temperature, water content and free fatty acid on reverse micelle formation of phospholipids in vegetable oil. *Colloids and Surfaces B: Biointerfaces*, **2017**, 160, 355-363	6	33
80	Scaling Up Production of Colloidal Lignin Particles. *Nordic Pulp and Paper Research Journal*, **2017**, 32, 586-596	1.1	38
79	Corona Treatment of Filled Dual-polymer Dispersion Coatings: Surface Properties and Grease Resistance. *Polymers and Polymer Composites*, **2017**, 25, 257-266	0.8	8
78	Adsorption of Proteins on Colloidal Lignin Particles for Advanced Biomaterials. *Biomacromolecules*, **2017**, 18, 2767-2776	6.9	53
77	All-lignin approach to prepare cationic colloidal lignin particles: stabilization of durable Pickering emulsions. *Green Chemistry*, **2017**, 19, 5831-5840	10	79
76	Hydrophobic, Superabsorbing Aerogels from Choline Chloride-Based Deep Eutectic Solvent Pretreated and Silylated Cellulose Nanofibrils for Selective Oil Removal. *ACS Applied Materials & Interfaces*, **2017**, 9, 25029-25037	9.5	131
75	Calcium Chelation of Lignin from Pulping Spent Liquor for Water-Resistant Slow-Release Urea Fertilizer Systems. *ACS Sustainable Chemistry and Engineering*, **2017**, 5, 1054-1061	8.3	35
74	Surface forces in lignocellulosic systems. *Current Opinion in Colloid and Interface Science*, **2017**, 27, 33-42	7.6	7
73	Surfactant-free carnauba wax dispersion and its use for layer-by-layer assembled protective surface coatings on wood. *Applied Surface Science*, **2017**, 396, 1273-1281	6.7	68
72	Antibacterial effects of wood structural components and extractives from Pinus sylvestris and Picea abies on methicillin-resistant Staphylococcus aureus and Escherichia coli O157:H7. *BioResources*, **2017**, 12, 7601-7614	1.3	15
71	Structural changes of lignin in biorefinery pretreatments and consequences to enzyme-lignin interactions - OPEN ACCESS. *Nordic Pulp and Paper Research Journal*, **2017**, 32, 550-571	1.1	29
70	Scaling Up Production of Colloidal Lignin Particles - OPEN ACCESS. *Nordic Pulp and Paper Research Journal*, **2017**, 32, 586-596	1.1	9
69	A simple process for lignin nanoparticle preparation. *Green Chemistry*, **2016**, 18, 1416-1422	10	328
68	Structural diversity in metal–organic nanoparticles based on iron isopropoxide treated lignin. *RSC Advances*, **2016**, 6, 31790-31796	3.7	31
67	Bioinspired lubricating films of cellulose nanofibrils and hyaluronic acid. *Colloids and Surfaces B: Biointerfaces*, **2016**, 138, 86-93	6	21
66	Electrochemical detection of hydrogen peroxide on platinum-containing tetrahedral amorphous carbon sensors and evaluation of their biofouling properties. *Materials Science and Engineering C*, **2015**, 55, 70-8	8.3	15
65	Strengthening effect of nanofibrillated cellulose is dependent on enzymatically oxidized polysaccharide gel matrices. *European Polymer Journal*, **2015**, 71, 171-184	5.2	16

64	Biomimetic collagen I and IV double layer Langmuir-Schaefer films as microenvironment for human pluripotent stem cell derived retinal pigment epithelial cells. *Biomaterials*, **2015**, 51, 257-269	15.6	45
63	Correlation between cellulose thin film supramolecular structures and interactions with water. *Soft Matter*, **2015**, 11, 4273-82	3.6	28
62	Toward energy efficiency through an optimized use of wood: The development of natural hydrophobic coatings that retain moisture-buffering ability. *Energy and Buildings*, **2015**, 105, 37-42	7	29
61	Inkjet ink spreading on polyelectrolyte multilayers deposited on pigment coated paper. *Journal of Colloid and Interface Science*, **2015**, 438, 179-190	9.3	7
60	Heat-Induced changes in oil and grease resistant hydroxypropylated-starch-based barrier coatings Sami-Seppo. *Nordic Pulp and Paper Research Journal*, **2015**, 30, 488-496	1.1	9
59	Modification of nanofibrillated cellulose using amphiphilic block-structured galactoglucomannans. *Carbohydrate Polymers*, **2014**, 110, 163-72	10.3	31
58	Supracolloidal multivalent interactions and wrapping of dendronized glycopolymers on native cellulose nanocrystals. *Journal of the American Chemical Society*, **2014**, 136, 866-9	16.4	63
57	A cartilage-inspired lubrication system. *Soft Matter*, **2014**, 10, 374-82	3.6	26
56	Nanocomposite films based on cellulose nanofibrils and water-soluble polysaccharides. *Reactive and Functional Polymers*, **2014**, 85, 167-174	4.6	29
55	Multilayers of cellulose derivatives and chitosan on nanofibrillated cellulose. *Carbohydrate Polymers*, **2014**, 108, 34-40	10.3	14
54	Non-ionic assembly of nanofibrillated cellulose and polyethylene glycol grafted carboxymethyl cellulose and the effect of aqueous lubrication in nanocomposite formation. *Soft Matter*, **2013**, 9, 7448	3.6	33
53	Direct measurements of non-ionic attraction and nanoscaled lubrication in biomimetic composites from nanofibrillated cellulose and modified carboxymethylated cellulose. *Nanoscale*, **2013**, 5, 11837-44	7.7	25
52	Clean and reactive nanostructured cellulose surface. *Cellulose*, **2013**, 20, 983-990	5.5	22
51	A fast method to produce strong NFC films as a platform for barrier and functional materials. *ACS Applied Materials & Interfaces*, **2013**, 5, 4640-7	9.5	221
50	All-cellulose multilayers: long nanofibrils assembled with short nanocrystals. *Cellulose*, **2013**, 20, 1777-1789	5.5	23
49	Targeted functionalization of spruce O-acetyl galactoglucomannans2,2,6,6-tetramethylpiperidin-1-oxyl-oxidation and carbodiimide-mediated amidation. *Journal of Applied Polymer Science*, **2013**, 130, 3122-3129	2.9	11
48	Effects on Pulp Properties of Magnesium Hydroxide in Peroxide Bleaching. *BioResources*, **2013**, 8,	1.3	6
47	Comparison of multilayer formation between different cellulose nanofibrils and cationic polymers. *Journal of Colloid and Interface Science*, **2012**, 373, 84-93	9.3	40

46	Surface functionalized nanofibrillar cellulose (NFC) film as a platform for immunoassays and diagnostics. *Biointerphases*, **2012**, 7, 61	1.8	115
45	Bicomponent lignocellulose thin films to study the role of surface lignin in cellulolytic reactions. *Biomacromolecules*, **2012**, 13, 3228-40	6.9	55
44	Functional and anionic cellulose-interacting polymers by selective chemo-enzymatic carboxylation of galactose-containing polysaccharides. *Biomacromolecules*, **2012**, 13, 2418-28	6.9	42
43	Interactions between inorganic nanoparticles and cellulose nanofibrils. *Cellulose*, **2012**, 19, 779-792	5.5	31
42	Experimental evidence on medium driven cellulose surface adaptation demonstrated using nanofibrillated cellulose. *Soft Matter*, **2011**, 7, 10917	3.6	94
41	Surface interaction forces of cellulose nanocrystals grafted with thermoresponsive polymer brushes. *Biomacromolecules*, **2011**, 12, 2788-96	6.9	67
40	Colloidal ionic assembly between anionic native cellulose nanofibrils and cationic block copolymer micelles into biomimetic nanocomposites. *Biomacromolecules*, **2011**, 12, 2074-81	6.9	74
39	Tailoring surface properties of paper using nanosized precipitated calcium carbonate particles. *ACS Applied Materials & Interfaces*, **2011**, 3, 3725-31	9.5	16
38	Preparation of ultrathin coating layers using surface modified silica nanoparticles. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2011**, 392, 313-321	5.1	13
37	The behaviour of cationic NanoFibrillar Cellulose in aqueous media. *Cellulose*, **2011**, 18, 1213-1226	5.5	108
36	Functionalization of nanofibrillated cellulose with silver nanoclusters: fluorescence and antibacterial activity. *Macromolecular Bioscience*, **2011**, 11, 1185-91	5.5	109
35	Free radical graft copolymerization of nanofibrillated cellulose with acrylic monomers. *Carbohydrate Polymers*, **2011**, 84, 1039-1047	10.3	139
34	Interactions of structurally different hemicelluloses with nanofibrillar cellulose. *Carbohydrate Polymers*, **2011**, 86, 1281-1290	10.3	94
33	Poly(N-isopropylacrylamide) brushes grafted from cellulose nanocrystals via surface-initiated single-electron transfer living radical polymerization. *Biomacromolecules*, **2010**, 11, 2683-91	6.9	237
32	Modifying the wettability of surfaces by nanoparticles: experiments and modeling using the Wenzel law. *Langmuir*, **2010**, 26, 14563-6	4	8
31	Cellulose Model Films: Challenges in Preparation. *ACS Symposium Series*, **2010**, 57-74	0.4	2
30	Effect of microfibrillated cellulose and fines on the drainage of kraft pulp suspension and paper strength. *Cellulose*, **2010**, 17, 1005-1020	5.5	260
29	Modification of lignin with laccases for the adsorption of anionic ferulic acid studied by quartz cristall microbalance with dissipation and AFM. *Holzforschung*, **2009**, 63,	2	1

28	Effect of alkaline treatment on cellulose supramolecular structure studied with combined confocal Raman spectroscopy and atomic force microscopy. *Cellulose*, **2009**, 16, 167-178	5.5	64
27	Nanoscale cellulose films with different crystallinities and mesostructures--their surface properties and interaction with water. *Langmuir*, **2009**, 25, 7675-85	4	277
26	Mediation of the nanotribological properties of cellulose by chitosan adsorption. *Biomacromolecules*, **2009**, 10, 645-50	6.9	26
25	Hemicelluloses at Interfaces: Some Aspects of the Interactions **2009**, 149-172		7
24	Properties of Cationic Polyelectrolyte Layers Adsorbed on Silica and Cellulose Surfaces Studied by QCM-D: Effect of Polyelectrolyte Charge Density and Molecular Weight. *Journal of Dispersion Science and Technology*, **2009**, 30, 969-979	1.5	37
23	Enzymatic hydrolysis of native cellulose nanofibrils and other cellulose model films: effect of surface structure. *Langmuir*, **2008**, 24, 11592-9	4	128
22	Model films from native cellulose nanofibrils. Preparation, swelling, and surface interactions. *Biomacromolecules*, **2008**, 9, 1273-82	6.9	185
21	Cellulose nanofibrils adsorption with poly(amideamine) epichlorohydrin studied by QCM-D and application as a paper strength additive. *Cellulose*, **2008**, 15, 303-314	5.5	181
20	Adsorption of polyelectrolyte multilayers and complexes on silica and cellulose surfaces studied by QCM-D. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2008**, 330, 134-142	5.1	33
19	Surface forces between cellulose surfaces in cationic polyelectrolyte solutions: The effect of polymer molecular weight and charge density. *Nordic Pulp and Paper Research Journal*, **2007**, 22, 249-257	1.1	21
18	Adsorption of colloidal extractives and dissolved hemicelluloses on thermomechanical pulp fiber components studied by QCM-D. *Nordic Pulp and Paper Research Journal*, **2007**, 22, 93-101	1.1	18
17	The effect of cationic polyelectrolyte complexes on interactions between cellulose surfaces. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2007**, 297, 122-130	5.1	11
16	Enzymatic hydrolysis combined with mechanical shearing and high-pressure homogenization for nanoscale cellulose fibrils and strong gels. *Biomacromolecules*, **2007**, 8, 1934-41	6.9	1450
15	Preparation of lignin and extractive model surfaces by using spincoating technique: Application for QCM-D studies. *Nordic Pulp and Paper Research Journal*, **2006**, 21, 444-450	1.1	25
14	Combining confocal Raman spectroscopy and atomic force microscopy to study wood extractives on cellulose surfaces. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2006**, 291, 197-201	5.1	28
13	Cellulose--model films and the fundamental approach. *Chemical Society Reviews*, **2006**, 35, 1287-304	58.5	183
12	Preparation of Langmuir/Blodgett-cellulose Surfaces by Using Horizontal Dipping Procedure. Application for Polyelectrolyte Adsorption Studies Performed with QCM-D. *Cellulose*, **2006**, 13, 519-535	5.5	69
11	Precipitation of lignin and extractives on kraft pulp: effect on surface chemistry, surface morphology and paper strength. *Cellulose*, **2004**, 11, 209-224	5.5	57

10	The wetting properties and morphology of lignin adsorbed on cellulose fibres and mica. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2004**, 239, 65-75	5.1	44
9	Surface chemistry and morphology of different mechanical pulps determined by ESCA and AFM. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2003**, 228, 143-158	5.1	82
8	Interaction between Cellulose and Xylan: An Atomic Force Microscope and Quartz Crystal Microbalance Study. *ACS Symposium Series*, **2003**, 269-290	0.4	24
7	Forces between Xylan-Coated Surfaces: Effect of Polymer Charge Density and Background Electrolyte. *Journal of Colloid and Interface Science*, **2001**, 242, 59-66	9.3	23
6	Lignin adsorption on cellulose fibre surfaces: Effect on surface chemistry, surface morphology and paper strength. *Cellulose*, **2001**, 8, 113-125	5.5	59
5	The Effect of a Cationic Polyelectrolyte on the Forces between Two Cellulose Surfaces and between One Cellulose and One Mineral Surface. *Journal of Colloid and Interface Science*, **2000**, 229, 620-627	9.3	35
4	Interactions between cellulose surfaces: effect of solution pH. *Journal of Adhesion Science and Technology*, **2000**, 14, 603-618	2	24
3	Interactions between cellulose and colloidal silica in the presence of polyelectrolytes. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **1997**, 129-130, 175-183	5.1	41
2	Surface Force Studies of Langmuir-Blodgett Cellulose Films. *Journal of Colloid and Interface Science*, **1997**, 186, 369-81	9.3	138
1	Lightweight lignocellulosic foams for thermal insulation. *Cellulose*,1	5.5	2