Alfons G Hoekstra

List of Publications by Citations

122 papers	2,934 citations	28 h-index	50 g-index
130 ext. papers	3,409 ext. citations	3 avg, IF	5.73 L-index

#	Paper	IF	Citations
122	The discrete-dipole-approximation code ADDA: Capabilities and known limitations. *Journal of Quantitative Spectroscopy and Radiative Transfer*, **2011**, 112, 2234-2247	2.1	409
121	Optical and non-optical methods for detection and characterization of microparticles and exosomes. *Journal of Thrombosis and Haemostasis*, **2010**, 8, 2596-607	15.4	382
120	Comparison between discrete dipole implementations and exact techniques. *Journal of Quantitative Spectroscopy and Radiative Transfer*, **2007**, 106, 417-436	2.1	117
119	Influence of stagnant zones on transient and asymptotic dispersion in macroscopically homogeneous porous media. *Physical Review Letters*, **2002**, 88, 234501	7.4	106
118	Mesoscopic simulations of systolic flow in the human abdominal aorta. *Journal of Biomechanics*, **2006**, 39, 873-84	2.9	67
117	Multi-scale modelling in computational biomedicine. *Briefings in Bioinformatics*, **2010**, 11, 142-52	13.4	60
116	The distributed ASCI Supercomputer project. *Operating Systems Review (ACM)*, **2000**, 34, 76-96	0.8	60
115	A Complex Automata approach for in-stent restenosis: Two-dimensional multiscale modelling and simulations. *Journal of Computational Science*, **2011**, 2, 9-17	3.4	59
114	Systematic comparison of the discrete dipole approximation and the finite difference time domain method for large dielectric scatterers. *Optics Express*, **2007**, 15, 17902-11	3.3	56
113	Multiscale modelling and simulation: a position paper. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372,	3	49
112	Foundations of distributed multiscale computing: Formalization, specification, and analysis. *Journal of Parallel and Distributed Computing*, **2013**, 73, 465-483	4.4	49
111	Multi-scale simulations of the dynamics of in-stent restenosis: impact of stent deployment and design. *Interface Focus*, **2011**, 1, 365-73	3.9	47
110	3D PULSATILE FLOW WITH THE LATTICE BOLTZMANN BGK METHOD. *International Journal of Modern Physics C*, **2002**, 13, 1119-1134	1.1	46
109	Modelling the effect of a functional endothelium on the development of in-stent restenosis. *PLoS ONE*, **2013**, 8, e66138	3.7	44
108	A framework for multi-scale modelling. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372,	3	42
107	Distributed multiscale computing with MUSCLE 2, the Multiscale Coupling Library and Environment. *Journal of Computational Science*, **2014**, 5, 719-731	3.4	42
106	Multiscale computing in the exascale era. *Journal of Computational Science*, **2017**, 22, 15-25	3.4	42

105	Cellular Level Modeling of Blood Rheology with An Improved Material Model for Red Blood Cells. *Frontiers in Physiology*, **2017**, 8, 563	4.6	41
104	Parallel performance of an IB-LBM suspension simulation framework. *Journal of Computational Science*, **2015**, 9, 45-50	3.4	41
103	Models of coral growth: spontaneous branching, compactification and the Laplacian growth assumption. *Journal of Theoretical Biology*, **2003**, 224, 153-66	2.3	41
102	Toward a Complex Automata Formalism for MultiScale Modeling. *International Journal for Multiscale Computational Engineering*, **2007**, 5, 491-502	2.4	41
101	Erythrocyte lysis in isotonic solution of ammonium chloride: theoretical modeling and experimental verification. *Journal of Theoretical Biology*, **2008**, 251, 93-107	2.3	39
100	Polyp oriented modelling of coral growth. *Journal of Theoretical Biology*, **2004**, 228, 559-76	2.3	39
99	Where do the platelets go? A simulation study of fully resolved blood flow through aneurysmal vessels. *Interface Focus*, **2013**, 3, 20120089	3.9	37
98	MML: towards a Multiscale Modeling Language. *Procedia Computer Science*, **2010**, 1, 819-826	1.6	36
97	Flexible composition and execution of high performance, high fidelity multiscale biomedical simulations. *Interface Focus*, **2013**, 3, 20120087	3.9	31
96	Quantification of the fraction poorly deformable red blood cells using ektacytometry. *Optics Express*, **2010**, 18, 14173-82	3.3	31
95	Corrected momentum exchange method for lattice Boltzmann simulations of suspension flow. *Physical Review E*, **2009**, 79, 036705	2.4	29
94	Endothelial repair process and its relevance to longitudinal neointimal tissue patterns: comparing histology with in silico modelling. *Journal of the Royal Society Interface*, **2014**, 11, 20140022	4.1	28
93	A Comparison of Fully-Coupled 3D In-Stent Restenosis Simulations to Data. *Frontiers in Physiology*, **2017**, 8, 284	4.6	27
92	Performance of distributed multiscale simulations. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372,	3	26
91	An in silico study on the role of smooth muscle cell migration in neointimal formation after coronary stenting. *Journal of the Royal Society Interface*, **2015**, 12, 20150358	4.1	24
90	SIMULATION OF A SYSTOLIC CYCLE IN A REALISTIC ARTERY WITH THE LATTICE BOLTZMANN BGK METHOD. *International Journal of Modern Physics B*, **2003**, 17, 95-98	1.1	24
89	A Distributed Multiscale Computation of a Tightly Coupled Model Using the Multiscale Modeling Language. *Procedia Computer Science*, **2012**, 9, 596-605	1.6	23
88	Simulations of time harmonic blood flow in the Mesenteric artery: comparing finite element and lattice Boltzmann methods. *BioMedical Engineering OnLine*, **2009**, 8, 23	4.1	23

87	Trials for Treatment of Acute Ischemic Stroke. *Frontiers in Neurology*, **2020**, 11, 558125	4.1	21
86	Towards a Complex Automata Framework for Multi-scale Modeling: Formalism and the Scale Separation Map. *Lecture Notes in Computer Science*, **2007**, 922-930	0.9	19
85	Red blood cell and platelet diffusivity and margination in the presence of cross-stream gradients in blood flows. *Physics of Fluids*, **2019**, 31, 031903	4.4	18
84	The influence of red blood cell deformability on hematocrit profiles and platelet margination. *PLoS Computational Biology*, **2020**, 16, e1007716	5	18
83	Scaling of shear-induced diffusion and clustering in a blood-like suspension. *Europhysics Letters*, **2016**, 114, 14002	1.6	17
82	Lees-Edwards boundary conditions for lattice Boltzmann suspension simulations. *Physical Review E*, **2009**, 79, 036706	2.4	17
81	Multiscale Computing with the Multiscale Modeling Library and Runtime Environment. *Procedia Computer Science*, **2013**, 18, 1097-1105	1.6	16
80	A porous circulation model of the human brain for clinical trials in ischaemic stroke. *Interface Focus*, **2021**, 11, 20190127	3.9	16
79	Hemocell: a high-performance microscopic cellular library. *Procedia Computer Science*, **2017**, 108, 159-165	1.6	15
78	Multiscale computing for science and engineering in the era of exascale performance. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2019**, 377, 20180144	3	15
77	Shear thickening of dense suspensions: The role of friction. *Physics of Fluids*, **2019**, 31, 103103	4.4	15
76	Validation of an efficient two-dimensional model for dense suspensions of red blood cells. *International Journal of Modern Physics C*, **2014**, 25, 1441005	1.1	15
75	An Agent-Based Coupling Platform for Complex Automata. *Lecture Notes in Computer Science*, **2008**, 227-233	0.9	15
74	Towards the virtual artery: a multiscale model for vascular physiology at the physics-chemistry-biology interface. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2016**, 374,	3	15
73	Coupling one-dimensional arterial blood flow to three-dimensional tissue perfusion models for trials of acute ischaemic stroke. *Interface Focus*, **2021**, 11, 20190125	3.9	14
72	Uncertainty Quantification of a Multiscale Model for In-Stent Restenosis. *Cardiovascular Engineering and Technology*, **2018**, 9, 761-774	2.2	14
71	Combined Lattice Boltzmann and rigid-body method for simulations of shear-thickening dense suspensions of hard particles. *Computers and Fluids*, **2018**, 172, 474-482	2.8	13
70	Revisiting the use of the immersed-boundary lattice-Boltzmann method for simulations of suspended particles. *Physical Review E*, **2017**, 96, 013302	2.4	13

69	Complex Automata: Multi-scale Modeling with Coupled Cellular Automata. *Understanding Complex Systems*, **2010**, 29-57	0.4	13
68	Location-Specific Comparison Between a 3D In-Stent Restenosis Model and Micro-CT and Histology Data from Porcine In Vivo Experiments. *Cardiovascular Engineering and Technology*, **2019**, 10, 568-582	2.2	12
67	From histology and imaging data to models for in-stent restenosis. *International Journal of Artificial Organs*, **2014**, 37, 786-800	1.9	12
66	ACCELERATED LATTICE BGK METHOD FOR UNSTEADY SIMULATIONS THROUGH MACH NUMBER ANNEALING. *International Journal of Modern Physics C*, **2003**, 14, 835-845	1.1	12
65	An integrative approach to high-performance biomedical problem solving environments on the Grid. *Parallel Computing*, **2004**, 30, 1037-1055	1	12
64	Dipolar unit size in coupled-dipole calculations of the scattering matrix elements. *Optics Letters*, **1993**, 18, 1211-3	3	12
63	Patterns for High Performance Multiscale Computing. *Future Generation Computer Systems*, **2019**, 91, 335-346	7.5	12
62	Inflow and outflow boundary conditions for 2D suspension simulations with the immersed boundary lattice Boltzmann method. *Computers and Fluids*, **2018**, 172, 312-317	2.8	11
61	A Principled Approach to Distributed Multiscale Computing, from Formalization to Execution **2011**,		11
60	A physical description of the adhesion and aggregation of platelets. *Royal Society Open Science*, **2017**, 4, 170219	3.3	10
59	New Computational Techniques to Simulate Light Scattering from Arbitrary Particles. *Particle and Particle Systems Characterization*, **1994**, 11, 189-193	3.1	10
58	Virtual physiological human 2016: translating the virtual physiological human to the clinic. *Interface Focus*, **2018**, 8, 20170067	3.9	10
57	Numerical Investigation of the Effects of Red Blood Cell Cytoplasmic Viscosity Contrasts on Single Cell and Bulk Transport Behaviour. *Applied Sciences (Switzerland)*, **2018**, 8, 1616	2.6	10
56	Identifying the start of a platelet aggregate by the shear rate and the cell-depleted layer. *Journal of the Royal Society Interface*, **2019**, 16, 20190148	4.1	9
55	Semi-intrusive uncertainty propagation for multiscale models. *Journal of Computational Science*, **2019**, 35, 80-90	3.4	9
54	Semi-intrusive multiscale metamodelling uncertainty quantification with application to a model of in-stent restenosis. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2019**, 377, 20180154	3	9
53	Asymptotic analysis of Complex Automata models for reaction□iffusion systems. *Applied Numerical Mathematics*, **2009**, 59, 2023-2034	2.5	9
52	Cellular automata models of tumour natural shrinkage. *Physica A: Statistical Mechanics and Its Applications*, **2011**, 390, 2283-2290	3.3	9

51	Load balancing of parallel cell-based blood flow simulations. *Journal of Computational Science*, **2018**, 24, 1-7	3.4	9
50	SIMULATING TIME HARMONIC FLOWS WITH THE REGULARIZED L-BGK METHOD. *International Journal of Modern Physics C*, **2007**, 18, 661-666	1.1	8
49	Towards a Complex Automata Multiscale Model of In-Stent Restenosis. *Lecture Notes in Computer Science*, **2009**, 705-714	0.9	8
48	DIFFUSION-LIMITED AGGREGATION IN LAMINAR FLOWS. *International Journal of Modern Physics C*, **2003**, 14, 1171-1182	1.1	7
47	A Framework for Multiscale and Multiscience Modeling and Numerical Simulations. *Lecture Notes in Computer Science*, **2011**, 2-8	0.9	7
46	Cell-resolved blood flow simulations of saccular aneurysms: effects of pulsatility and aspect ratio. *Journal of the Royal Society Interface*, **2018**, 15,	4.1	7
45	Multiscale modelling, simulation and computing: from the desktop to the exascale. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2019**, 377, 20180355	3	6
44	Multiscale modeling: recent progress and open questions. *Multiscale and Multidisciplinary Modeling, Experiments and Design*, **2018**, 1, 57-68	1.4	6
43	Uncertainty quantification and sensitivity analysis applied to the wind wave model SWAN. *Environmental Modelling and Software*, **2017**, 95, 344-357	5.2	6
42	A cell-based mechanical model of coronary artery tunica media. *Journal of the Royal Society Interface*, **2017**, 14,	4.1	6
41	3D virtual environment for project-based learning **2014**,		6
40	Heterogeneous Multiscale Simulations of Suspension Flow. *Multiscale Modeling and Simulation*, **2011**, 9, 1301-1326	1.8	6
39	Haemodynamic flow conditions at the initiation of high-shear platelet aggregation: a combined and cellular study. *Interface Focus*, **2021**, 11, 20190126	3.9	6
38	Biorheology of occlusive thrombi formation under high shear: in vitro growth and shrinkage. *Scientific Reports*, **2020**, 10, 18604	4.9	6
37	Corrigendum to The discrete dipole approximation: An overview and recent developments[J. Quant. Spectrosc. Radiat. Transfer 106 (2007) 558589]. *Journal of Quantitative Spectroscopy and Radiative Transfer*, **2016**, 171, 82-83	2.1	6
36	Non-intrusive and semi-intrusive uncertainty quantification of a multiscale in-stent restenosis model. *Reliability Engineering and System Safety*, **2021**, 214, 107734	6.3	6
35	Optimizing Parallel Performance of the Cell Based Blood Flow Simulation Software HemoCell. *Lecture Notes in Computer Science*, **2019**, 537-547	0.9	5
34	Redistribution of TPA Fluxes in the Presence of PAI-1 Regulates Spatial Thrombolysis. *Biophysical Journal*, **2020**, 119, 638-651	2.9	5

33	Anatomy and Physiology of Multiscale Modeling and Simulation in Systems Medicine. *Methods in Molecular Biology*, **2016**, 1386, 375-404	1.4	5
32	Uncertainty quantification patterns for multiscale models. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2021**, 379, 20200072	3	5
31	Applicability analysis to evaluate credibility of an in silico thrombectomy procedure. *Journal of Biomechanics*, **2021**, 126, 110631	2.9	5
30	The influence of mitoses rate on growth dynamics of a cellular automata model of tumour growth. *Procedia Computer Science*, **2010**, 1, 971-978	1.6	3
29	Effect of aniosmotic media on the volume of the T-lymphocyte nucleus. *Biophysical Journal*, **1991**, 59, 765-74	2.9	3
28	Animal models and animal-free innovations for cardiovascular research: current status and routes to be explored. Consensus document of the ESC working group on myocardial function and the ESC Working Group on Cellular Biology of the Heart.. *Cardiovascular Research*, **2022**,	9.9	3
27	Easing Multiscale Model Design and Coupling with MUSCLE 3. *Lecture Notes in Computer Science*, **2020**, 425-438	0.9	3
26	Reliability and reproducibility in computational science: implementing validation, verification and uncertainty quantification. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2021**, 379, 20200409	3	3
25	Modelling the leptomeningeal collateral circulation during acute ischaemic stroke. *Medical Engineering and Physics*, **2021**, 91, 1-11	2.4	3
24	Mapping the multicausality of Alzheimer's disease through group model building. *GeroScience*, **2021**, 43, 829-843	8.9	3
23	Nonparametric estimation of Fisher information from real data. *Physical Review E*, **2016**, 93, 023301	2.4	2
22	COMPARING ENTROPIC AND MULTIPLE RELAXATION TIMES LATTICE BOLTZMANN METHODS FOR BLOOD FLOW SIMULATIONS. *International Journal of Modern Physics C*, **2009**, 20, 721-733	1.1	2
21	Sensitivity analysis based dimension reduction of multiscale models. *Mathematics and Computers in Simulation*, **2020**, 170, 205-220	3.3	2
20	On the Sensitivity Analysis of Porous Finite Element Models for Cerebral Perfusion Estimation. *Annals of Biomedical Engineering*, **2021**, 1	4.7	2
19	Partitioning of Arterial Tree for Parallel Decomposition of Hemodynamic Calculations. *Procedia Computer Science*, **2016**, 80, 977-987	1.6	1
18	Towards Distributed Multiscale Simulation of Biological Processes **2011**,		1
17	Computational biomedicine. Part II: organs and systems. *Interface Focus*, **2021**, 11, 20200082	3.9	1
16	A particle-based model for endothelial cell migration under flow conditions. *Biomechanics and Modeling in Mechanobiology*, **2020**, 19, 681-692	3.8	1

15	Effects of local coronary blood flow dynamics on the predictions of a model of in-stent restenosis. *Journal of Biomechanics*, **2021**, 120, 110361	2.9	1
14	Two-Way Coupling Between 1D Blood Flow and 3D Tissue Perfusion Models. *Lecture Notes in Computer Science*, **2021**, 670-683	0.9	1
13	Uncertainty Quantification of Coupled 1D Arterial Blood Flow and 3D Tissue Perfusion Models Using the INSIST Framework. *Lecture Notes in Computer Science*, **2021**, 691-697	0.9	1
12	Tutorial applications for Verification, Validation and Uncertainty Quantification using VECMA toolkit. *Journal of Computational Science*, **2021**, 53, 101402	3.4	1
11	des-ist: A Simulation Framework to Streamline Event-Based In Silico Trials. *Lecture Notes in Computer Science*, **2021**, 648-654	0.9	1
10	The Effects of Micro-vessel Curvature Induced Elongational Flows on Platelet Adhesion. *Annals of Biomedical Engineering*, **2021**, 49, 3609	4.7	0
9	In silico trials for treatment of acute ischemic stroke: Design and implementation. *Computers in Biology and Medicine*, **2021**, 137, 104802	7	0
8	Quantitative 3D analysis of tissue damage in a rat model of microembolization. *Journal of Biomechanics*, **2021**, 128, 110723	2.9	0
7	Uncertainty quantification of a three-dimensional in-stent restenosis model with surrogate modelling.. *Journal of the Royal Society Interface*, **2022**, 19, 20210864	4.1	0
6	The effect of stiffened diabetic red blood cells on wall shear stress in a reconstructed 3D microaneurysm.. *Computer Methods in Biomechanics and Biomedical Engineering*, **2022**, 1-19	2.1	0
5	Fluid Simulations with Atomistic Resolution: Multiscale Model with Account of Nonlocal Momentum Transfer. *Procedia Computer Science*, **2015**, 51, 1108-1117	1.6	
4	Multiscale Modelling and Simulation, 14th International Workshop. *Procedia Computer Science*, **2017**, 108, 1811-1812	1.6	
3	On the Possible Interaction Mechanism between Collateral Vessels and Restenosis. *Procedia Computer Science*, **2015**, 66, 412-418	1.6	
2	A Heterogeneous Multi-scale Model for Blood Flow. *Lecture Notes in Computer Science*, **2020**, 403-409	0.9	
1	Impact of cardiovascular evaluations and interventions on fall risk in older adults: a protocol for a scoping review and evidence map.. *BMJ Open*, **2022**, 12, e057959	3	