

Frits Mastik

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102
papers

4,409
citations

34
h-index

65
g-index

142
ext. papers

5,118
ext. citations

4.6
avg, IF

4.69
L-index

#	Paper	IF	Citations
102	Arterial wall characteristics determined by intravascular ultrasound imaging: an in vitro study. <i>Journal of the American College of Cardiology</i> , 1989 , 14, 947-52	15.1	541
101	Effects of the direct lipoprotein-associated phospholipase A(2) inhibitor darapladib on human coronary atherosclerotic plaque. <i>Circulation</i> , 2008 , 118, 1172-82	16.7	432
100	Characterizing vulnerable plaque features with intravascular elastography. <i>Circulation</i> , 2003 , 108, 2636-41	16.7	261
99	Identification of atherosclerotic plaque components with intravascular ultrasound elastography in vivo: a Yucatan pig study. <i>Circulation</i> , 2002 , 105, 1627-30	16.7	198
98	Brandaris 128: A digital 25 million frames per second camera with 128 highly sensitive frames. <i>Review of Scientific Instruments</i> , 2003 , 74, 5026-5034	1.7	166
97	Contactless multiple wavelength photoplethysmographic imaging: a first step toward "SpO2 camera" technology. <i>Annals of Biomedical Engineering</i> , 2005 , 33, 1034-41	4.7	166
96	Strain distribution over plaques in human coronary arteries relates to shear stress. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2008 , 295, H1608-14	5.2	143
95	"Compression-only" behavior of phospholipid-coated contrast bubbles. <i>Ultrasound in Medicine and Biology</i> , 2007 , 33, 653-6	3.5	135
94	Characterization of plaque components and vulnerability with intravascular ultrasound elastography. <i>Physics in Medicine and Biology</i> , 2000 , 45, 1465-75	3.8	133
93	Incidence of high-strain patterns in human coronary arteries: assessment with three-dimensional intravascular palpography and correlation with clinical presentation. <i>Circulation</i> , 2004 , 109, 2716-9	16.7	127
92	Morphological and mechanical information of coronary arteries obtained with intravascular elastography; feasibility study in vivo. <i>European Heart Journal</i> , 2002 , 23, 405-13	9.5	113
91	Fully automatic luminal contour segmentation in intracoronary ultrasound imaging--a statistical approach. <i>IEEE Transactions on Medical Imaging</i> , 2004 , 23, 554-66	11.7	99
90	Noninvasive detection of subclinical coronary atherosclerosis coupled with assessment of changes in plaque characteristics using novel invasive imaging modalities: the Integrated Biomarker and Imaging Study (IBIS). <i>Journal of the American College of Cardiology</i> , 2006 , 47, 1134-42	15.1	93
89	Optical imaging of contrast agent microbubbles in an ultrasound field with a 100-MHz camera. <i>Ultrasound in Medicine and Biology</i> , 2000 , 26, 487-92	3.5	87
88	Intravascular palpography for vulnerable plaque assessment. <i>Journal of the American College of Cardiology</i> , 2006 , 47, C86-91	15.1	80
87	Advancing intravascular ultrasonic palpation toward clinical applications. <i>Ultrasound in Medicine and Biology</i> , 2001 , 27, 1471-80	3.5	77
86	Finite element modeling and intravascular ultrasound elastography of vulnerable plaques: parameter variation. <i>Ultrasonics</i> , 2004 , 42, 723-9	3.5	66

85	Real-time volumetric lipid imaging in vivo by intravascular photoacoustics at 20 frames per second. <i>Biomedical Optics Express</i> , 2017 , 8, 943-953	3.5	60
84	Current diagnostic modalities for vulnerable plaque detection. <i>Current Pharmaceutical Design</i> , 2007 , 13, 995-1001	3.3	60
83	High-definition imaging of carotid artery wall dynamics. <i>Ultrasound in Medicine and Biology</i> , 2014 , 40, 2392-403	3.5	58
82	Intravascular palpography for high-risk vulnerable plaque assessment. <i>Herz</i> , 2003 , 28, 488-95	2.6	56
81	First-in-man clinical use of combined near-infrared spectroscopy and intravascular ultrasound: a potential key to predict distal embolization and no-reflow?. <i>Journal of the American College of Cardiology</i> , 2010 , 56, 314	15.1	54
80	A finite element model for performing intravascular ultrasound elastography of human atherosclerotic coronary arteries. <i>Ultrasound in Medicine and Biology</i> , 2004 , 30, 803-13	3.5	54
79	Assessment of vulnerable plaque composition by matching the deformation of a parametric plaque model to measured plaque deformation. <i>IEEE Transactions on Medical Imaging</i> , 2005 , 24, 514-28	11.7	50
78	Compressive 3D ultrasound imaging using a single sensor. <i>Science Advances</i> , 2017 , 3, e1701423	14.3	48
77	Brandaris 128 ultra-high-speed imaging facility: 10 years of operation, updates, and enhanced features. <i>Review of Scientific Instruments</i> , 2012 , 83, 103706	1.7	46
76	Young's modulus reconstruction of vulnerable atherosclerotic plaque components using deformable curves. <i>Ultrasound in Medicine and Biology</i> , 2006 , 32, 201-10	3.5	45
75	First use in patients of a combined near infra-red spectroscopy and intra-vascular ultrasound catheter to identify composition and structure of coronary plaque. <i>EuroIntervention</i> , 2010 , 5, 755-6	3.1	45
74	An inverse method for imaging the local elasticity of atherosclerotic coronary plaques. <i>IEEE Transactions on Information Technology in Biomedicine</i> , 2008 , 12, 277-89		43
73	Robust intravascular optical coherence elastography by line correlations. <i>Physics in Medicine and Biology</i> , 2007 , 52, 2445-58	3.8	43
72	Plane-wave ultrasound beamforming using a nonuniform fast Fourier transform. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2012 , 59, 2684-91	3.2	41
71	Three-dimensional palpography of human coronary arteries. Ex vivo validation and in-patient evaluation. <i>Herz</i> , 2005 , 30, 125-33	2.6	41
70	Ultrasonic myocardial integrated backscatter and myocardial wall thickness in animal experiments. <i>Ultrasound in Medicine and Biology</i> , 1990 , 16, 29-36	3.5	34
69	High shear stress induces a strain increase in human coronary plaques over a 6-month period. <i>EuroIntervention</i> , 2011 , 7, 121-7	3.1	34
68	Rationale and methods of the integrated biomarker and imaging study (IBIS): combining invasive and non-invasive imaging with biomarkers to detect subclinical atherosclerosis and assess coronary lesion biology. <i>International Journal of Cardiovascular Imaging</i> , 2005 , 21, 425-41	2.5	28

67	Motion compensation for intravascular ultrasound palpography. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2006 , 53, 1269-80	3.2	27
66	Functional Ultrasound (FUS) During Awake Brain Surgery: The Clinical Potential of Intra-Operative Functional and Vascular Brain Mapping. <i>Frontiers in Neuroscience</i> , 2019 , 13, 1384	5.1	25
65	In vivo 3D distribution of lipid-core plaque in human coronary artery as assessed by fusion of near infrared spectroscopy-intravascular ultrasound and multislice computed tomography scan. <i>Circulation: Cardiovascular Imaging</i> , 2010 , 3, e6-7	3.9	25
64	Intravascular elastography: from bench to bedside. <i>Journal of Interventional Cardiology</i> , 2003 , 16, 253-9	1.8	25
63	Ultrasound myocardial integrated backscatter signal processing: frequency domain versus time domain. <i>Ultrasound in Medicine and Biology</i> , 1993 , 19, 211-9	3.5	25
62	3D functional ultrasound imaging of pigeons. <i>NeuroImage</i> , 2018 , 183, 469-477	7.9	24
61	Non-spherical oscillations drive the ultrasound-mediated release from targeted microbubbles. <i>Communications Physics</i> , 2018 , 1,	5.4	23
60	Local elasticity imaging of vulnerable atherosclerotic coronary plaques. <i>Advances in Cardiology</i> , 2007 , 44, 35-61		23
59	Combined optical coherence tomography and intravascular ultrasound radio frequency data analysis for plaque characterization. Classification accuracy of human coronary plaques in vitro. <i>International Journal of Cardiovascular Imaging</i> , 2010 , 26, 843-50	2.5	20
58	Remote non-invasive stereoscopic imaging of blood vessels: first in-vivo results of a new multispectral contrast enhancement technology. <i>Annals of Biomedical Engineering</i> , 2006 , 34, 1870-8	4.7	20
57	Effect of temperature increase and freezing on intravascular elastography. <i>Ultrasonics</i> , 2002 , 40, 879-81	3.5	20
56	The relative contributions of myocardial wall thickness and ischemia to ultrasonic myocardial integrated backscatter during experimental ischemia. <i>Ultrasound in Medicine and Biology</i> , 1991 , 17, 41-8	3.5	20
55	Validation of Resting Diastolic Pressure Ratio Calculated by a Novel Algorithm and Its Correlation With Distal Coronary Artery Pressure to Aortic Pressure, Instantaneous Wave-Free Ratio, and Fractional Flow Reserve. <i>Circulation: Cardiovascular Interventions</i> , 2018 , 11, e006911	6	19
54	Opening of endothelial cell-cell contacts due to sonoporation. <i>Journal of Controlled Release</i> , 2020 , 322, 426-438	11.7	18
53	Quantitative IVUS blood flow: validation in vitro, in animals and in patients. <i>Ultrasound in Medicine and Biology</i> , 2003 , 29, 507-15	3.5	18
52	Influence of data processing on cyclic variation of integrated backscatter and wall thickness in stunned porcine myocardium. <i>Ultrasound in Medicine and Biology</i> , 1997 , 23, 405-14	3.5	17
51	Robustness of reconstructing the Young's modulus distribution of vulnerable atherosclerotic plaques using a parametric plaque model. <i>Ultrasound in Medicine and Biology</i> , 2005 , 31, 1631-45	3.5	16
50	Influence of attenuation on measurements of ultrasonic myocardial integrated backscatter during cardiac cycle (an in vitro study). <i>Ultrasound in Medicine and Biology</i> , 1991 , 17, 869-77	3.5	16

49	Intravascular Ultrasound Elastography: A Clinician's Tool for Assessing Vulnerability and Material Composition of Plaques. <i>Studies in Health Technology and Informatics</i> , 2005 , 113, 75-96	0.5	16
48	Decorrelation-based blood flow velocity estimation: effect of spread of flow velocity, linear flow velocity gradients, and parabolic flow. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2002 , 49, 705-14	3.2	14
47	Focal areas of increased lipid concentration on the coating of microbubbles during short tone-burst ultrasound insonification. <i>PLoS ONE</i> , 2017 , 12, e0180747	3.7	13
46	Accuracy in prediction of catheter rotation in IVUS with feature-based optical flow--a phantom study. <i>IEEE Transactions on Information Technology in Biomedicine</i> , 2008 , 12, 356-65		12
45	The relationship between myocardial integrated backscatter, perfusion pressure and wall thickness during isovolumic contraction: an isolated pig heart study. <i>Ultrasound in Medicine and Biology</i> , 1996 , 22, 43-52	3.5	12
44	Myocardial backscatter analysis in animal experiments. <i>Ultrasonics</i> , 1988 , 26, 155-63	3.5	12
43	Real-time photoacoustic assessment of radiofrequency ablation lesion formation in the left atrium. <i>Photoacoustics</i> , 2019 , 16, 100150	9	12
42	High-Resolution Imaging of Intracellular Calcium Fluctuations Caused by Oscillating Microbubbles. <i>Ultrasound in Medicine and Biology</i> , 2020 , 46, 2017-2029	3.5	11
41	Improving IVUS palpography by incorporation of motion compensation based on block matching and optical flow. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2008 , 55, 2392-404	3.2	11
40	Flow estimation using an intravascular imaging catheter. <i>Ultrasonics</i> , 2000 , 38, 363-8	3.5	11
39	In vivo intravascular photoacoustic imaging of plaque lipid in coronary atherosclerosis. <i>EuroIntervention</i> , 2019 , 15, 452-456	3.1	11
38	Combined Confocal Microscope and Brandaris 128 Ultra-High-Speed Camera. <i>Ultrasound in Medicine and Biology</i> , 2019 , 45, 2575-2582	3.5	10
37	Clinical imaging of the vulnerable plaque in the coronary arteries: new intracoronary diagnostic methods. <i>Journal of Cardiovascular Medicine</i> , 2006 , 7, 21-8	1.9	10
36	A study of coronary artery rotational motion with dense scale-space optical flow in intravascular ultrasound. <i>Physics in Medicine and Biology</i> , 2009 , 54, 1397-418	3.8	8
35	Unique pumping-out fracturing mechanism of a polymer-shelled contrast agent: an acoustic characterization and optical visualization. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2015 , 62, 451-62	3.2	7
34	Sparse Ultrasound Image Reconstruction From a Shape-Sensing Single-Element Forward-Looking Catheter. <i>IEEE Transactions on Biomedical Engineering</i> , 2018 , 65, 2210-2218	5	7
33	Simultaneous Morphological and Flow Imaging Enabled by Megahertz Intravascular Doppler Optical Coherence Tomography. <i>IEEE Transactions on Medical Imaging</i> , 2020 , 39, 1535-1544	11.7	7
32	Structured ultrasound microscopy. <i>Applied Physics Letters</i> , 2018 , 112, 251901	3.4	7

31	Brandaris 128: a rotating-mirror digital camera with 128 frames at 25 Mfps 2003 , 4948, 342		6
30	Dynamic noise correction for IVUS quantitative volume blood flow: methods and numerical validation. <i>Ultrasound in Medicine and Biology</i> , 2002 , 28, 1053-60	3.5	6
29	Measuring submicrometer displacement vectors using high-frame-rate ultrasound imaging. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2015 , 62, 1733-44	3.2	5
28	IVUS flow measurements: line spread function and decorrelation pattern. <i>Ultrasonics</i> , 2002 , 40, 843-7	3.5	5
27	Coronary Flow Reserve Versus Geometric Measurements of Coronary Dimensions: Advantages and Limitations of the Functional Stenosis Assessment. <i>Journal of Interventional Cardiology</i> , 1999 , 12, 411-424 ^{1,8}		5
26	High frame rate ultrasound imaging of human carotid artery dynamics 2012 ,		4
25	Lipid-rich Plaques Detected by Near-infrared Spectroscopy Are More Frequently Exposed to High Shear Stress. <i>Journal of Cardiovascular Translational Research</i> , 2021 , 14, 416-425	3.3	4
24	Reconstructive compounding for IVUS palpography. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2009 , 56, 2630-42	3.2	3
23	In vitro demonstration of an SpO ₂ -camera 2007 ,		3
22	Robust intravascular optical coherence elastography driven by acoustic radiation pressure 2007 ,		3
21	Carotid artery wall dynamics captured with multi-plane high-frame-rate imaging 2015 ,		2
20	High frame rate ultrasound displacement vector imaging 2014 ,		2
19	Ultrasound-guided photoacoustic image reconstruction: image completion and boundary suppression. <i>Journal of Biomedical Optics</i> , 2013 , 18, 096017	3.5	2
18	An intravascular photoacoustic imaging catheter 2010 ,		2
17	Segmented high speed imaging of vibrating microbubbles during long ultrasound pulses 2012 ,		2
16	P3A-5 Two Methods for Catheter Motion Correction in IVUS Palpography. <i>Proceedings IEEE Ultrasonics Symposium</i> , 2007 ,		2
15	Motion compensation for intravascular ultrasound palpography for in vivo vulnerable plaque detection		2
14	Echo decorrelation estimated from signal powers. <i>Ultrasound in Medicine and Biology</i> , 1999 , 25, 405-9	3.5	2

13	Catheter design optimization for practical intravascular photoacoustic imaging (IVPA) of vulnerable plaques 2018 ,		2
12	Incidence of vulnerable plaques in humans: assessment with intravascular palpography. <i>European Heart Journal</i> , 2003 , 24, 419	9.5	2
11	Real-Time Coded Excitation Imaging Using a CMUT-Based Side Looking Array for Intravascular Ultrasound. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2021 , 68, 2048-2058	3.2	2
10	3D Imaging with a single-element forward-looking steerable IVUS catheter: initial testing 2016 ,		2
9	Contrast-enhanced intravascular ultrasound 3D reconstruction of a vasa vasorum mimicking model 2010 ,		1
8			1
7	Combined optical sizing and acoustical characterization of single freely-floating microbubbles. <i>Applied Physics Letters</i> , 2016 , 109, 234104	3.4	1
6	INTRAVASCULAR ULTRASOUND PALPOGRAPHY: A NEW METHOD FOR THE DETECTION OF THE VULNERABLE PLAQUE. <i>Journal of Mechanics in Medicine and Biology</i> , 2006 , 06, 35-38	0.7	
5	Intravascular Elastography. <i>BMUS Bulletin</i> , 2003 , 11, 12-16		
4	Fully automatic contour detection in intravascular ultrasound imaging 2004 , 5373, 108		
3	NIMG-19. USING FUNCTIONAL ULTRASOUND (FUS) TO MAP BRAIN FUNCTIONALITY AND TUMOR VASCULATURE WITH MICROMETER-MILLISECOND PRECISION. <i>Neuro-Oncology</i> , 2020 , 22, ii151-ii151		1
2	Intravascular palpography for vulnerable plaque assessment 2007 , 191-198		
1	Intravascular Palpography 289-296		