Gijs van Soest

List of Publications by Year
in descending order

157 papers	5,995 citations	81900 39 h-index	76900 74 g-index
163 all docs	163 docs citations	163 times ranked	5168 citing authors

#	Article	IF	Citations
1	Consensus Standards for Acquisition, Measurement, and Reporting of Intravascular Optical Coherence Tomography Studies. Journal of the American College of Cardiology, 2012, 59, 1058-1072.	2.8	1,530
2	Optical coherence tomography patterns of stent restenosis. American Heart Journal, 2009, 158, 284-293.	2.7	309
3	Intravascular photoacoustic imaging of human coronary atherosclerosis. Optics Letters, 2011, 36, 597.	3.3	241
4	Atherosclerotic tissue characterization in vivo by optical coherence tomography attenuation imaging. Journal of Biomedical Optics, 2010, 15, 011105.	2.6	217
5	Hybrid intravascular imaging: recent advances, technical considerations, and current applications in the study of plaque pathophysiology. European Heart Journal, 2017, 38, 400-412.	2.2	152
6	Photoacoustic imaging of human coronary atherosclerosis in two spectral bands. Photoacoustics, 2014, 2, 12-20.	7.8	120
7	Diagnosis of Vertical Root Fractures with Optical Coherence Tomography. Journal of Endodontics, 2008, 34, 739-742.	3.1	111
8	Intravascular Photoacoustic Imaging: A New Tool for Vulnerable Plaque Identification. Ultrasound in Medicine and Biology, 2014, 40, 1037-1048.	1.5	104
9	Pitfalls in Plaque Characterization by OCT. JACC: Cardiovascular Imaging, 2011, 4, 810-813.	5.3	103
10	Intravascular optical coherence tomography imaging at 3200 frames per second. Optics Letters, 2013, 38, 1715.	3.3	103
11	OCT Assessment of the Long-Term Vascular Healing Response 5 Years AfterÂEverolimus-Eluting BioresorbableÂVascular Scaffold. Journal of the American College of Cardiology, 2014, 64, 2343-2356.	2.8	101
12	Vulnerable plaques and patients: state-of-the-art. European Heart Journal, 2020, 41, 2997-3004.	2.2	98
13	Amplifying volume in scattering media. Optics Letters, 1999, 24, 306.	3.3	95
14	High-Definition Imaging of Carotid Artery Wall Dynamics. Ultrasound in Medicine and Biology, 2014, 40, 2392-2403.	1.5	90
15	Spontaneous Coronary Artery Dissection. JACC: Cardiovascular Imaging, 2019, 12, 2475-2488.	5.3	88
16	Heartbeat OCT: in vivo intravascular megahertz-optical coherence tomography. Biomedical Optics Express, 2015, 6, 5021.	2.9	80
17	Real-time volumetric lipid imaging in vivo by intravascular photoacoustics at 20 frames per second. Biomedical Optics Express, 2017, 8, 943.	2.9	80
18	Dynamics of a Random Laser above Threshold. Physical Review Letters, 2001, 86, 1522-1525.	7.8	77

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19	Enhanced backscattering from photonic crystals. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 268, 104-111.	2.1	74
20	Spectroscopic intravascular photoacoustic imaging of lipids in atherosclerosis. Journal of Biomedical Optics, 2014, 19, 026006.	2.6	63
21	Photoacoustic imaging of carotid artery atherosclerosis. Journal of Biomedical Optics, 2014, 19, 110504.	2.6	61
22	The Ability of Optical Coherence Tomography to Characterize the Root Canal Walls. Journal of Endodontics, 2007, 33, 1369-1373.	3.1	60
23	Lipid detection in atherosclerotic human coronaries by spectroscopic intravascular photoacoustic imaging. Optics Express, 2013, 21, 21472.	3.4	60
24	Plane-wave ultrasound beamforming using a nonuniform fast fourier transform. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 2684-91.	3.0	58
25	Specific imaging of atherosclerotic plaque lipids with two-wavelength intravascular photoacoustics. Biomedical Optics Express, 2015, 6, 3276.	2.9	58
26	SCIAMACHY Level 1 data: calibration concept and in-flight calibration. Atmospheric Chemistry and Physics, 2006, 6, 5347-5367.	4.9	57
27	Reproducibility of coronary Fourier domain optical coherence tomography: quantitative analysis of in vivo stented coronary arteries using three different software packages. EuroIntervention, 2010, 6, 371-379.	3.2	57
28	Î²factor in a random laser. Physical Review E, 2002, 65, 047601.	2.1	55
29	Coronary Plaque Microstructure and Composition Modify Optical Polarization. JACC: Cardiovascular Imaging, 2018, 11, 1666-1676.	5.3	54
30	Robust intravascular optical coherence elastography by line correlations. Physics in Medicine and Biology, 2007, 52, 2445-2458.	3.0	52
31	TomografÃa de coherencia Ã³ptica de segunda generaciÃ³n en la prÃ¡ctica clÃnica. La adquisiciÃ³n de datos de alta velocidad muestra una reproducibilidad excelente en pacientes tratados con intervenciones coronarias percutÃ¡neas. Revista Espanola De Cardiologia, 2010, 63, 893-903.	1.2	52
32	First use in patients of a combined near infra-red spectroscopy and intra-vascular ultrasound catheter to identify composition and structure of coronary plaque. EuroIntervention, 2010, 5, 755-756.	3.2	52
33	Parametric imaging of attenuation by optical coherence tomography: review of models, methods, and clinical translation. Journal of Biomedical Optics, 2020, 25, 1.	2.6	51
34	A Front-End ASIC With High-Voltage Transmit Switching and Receive Digitization for 3-D Forward-Looking Intravascular Ultrasound Imaging. IEEE Journal of Solid-State Circuits, 2018, 53, 2284-2297.	5.4	49
35	Azimuthal Registration of Image Sequences Affected by Nonuniform Rotation Distortion. IEEE Transactions on Information Technology in Biomedicine, 2008, 12, 348-355.	3.2	48
36	The diagnostic value of intracoronary optical coherence tomography. Herz, 2011, 36, 417-429.	1.1	48

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37	Safety of optical coherence tomography in daily practice: a comparison with intravascular ultrasound. European Heart Journal Cardiovascular Imaging, 2017, 18, jew037.	1.2	47
38	Development of a high-speed synchronous micro motor and its application in intravascular imaging. Sensors and Actuators A: Physical, 2014, 218, 60-68.	4.1	43
39	Optical Coherence Tomography: Potential Clinical Applications. Current Cardiovascular Imaging Reports, 2012, 5, 206-220.	0.6	36
40	Contrast-Enhanced Intravascular Ultrasound Pulse Sequences for Bandwidth-Limited Transducers. Ultrasound in Medicine and Biology, 2013, 39, 706-713.	1.5	36
41	Intravascular Polarimetry in Patients With Coronary Artery Disease. JACC: Cardiovascular Imaging, 2020, 13, 790-801.	5.3	35
42	Amplification and diffusion of spontaneous emission in strongly scattering medium. Journal of Applied Physics, 2000, 87, 7623-7628.	2.5	34
43	Biomechanical Stress Profiling of Coronary Atherosclerosis. JACC: Cardiovascular Imaging, 2020, 13, 804-816.	5.3	32
44	A 2-D Ultrasound Transducer With Front-End ASIC and Low Cable Count for 3-D Forward-Looking Intravascular Imaging: Performance and Characterization. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 1832-1844.	3.0	31
45	Combined optical coherence tomography and intravascular ultrasound radio frequency data analysis for plaque characterization. Classification accuracy of human coronary plaques in vitro. International Journal of Cardiovascular Imaging, 2010, 26, 843-850.	1.5	29
46	Real-time photoacoustic assessment of radiofrequency ablation lesion formation in the left atrium. Photoacoustics, 2019, 16, 100150.	7.8	29
47	Imaging Microvasculature with Contrast-Enhanced Ultraharmonic Ultrasound. Ultrasound in Medicine and Biology, 2014, 40, 1318-1328.	1.5	27
48	Lipid signature of advanced human carotid atherosclerosis assessed by mass spectrometry imaging. Journal of Lipid Research, 2021, 62, 100020.	4.2	27
49	Quantification of fibrous cap thickness in intracoronary optical coherence tomography with a contour segmentation method based on dynamic programming. International Journal of Computer Assisted Radiology and Surgery, 2015, 10, 1383-1394.	2.8	25
50	Intravascular imaging for characterization of coronary atherosclerosis. Current Opinion in Biomedical Engineering, 2017, 3, 1-12.	3.4	25
51	Spectroscopic photoacoustic imaging of radiofrequency ablation in the left atrium. Biomedical Optics Express, 2018, 9, 1309.	2.9	25
52	Interstudy reproducibility of the second generation, Fourier domain optical coherence tomography in patients with coronary artery disease and comparison with intravascular ultrasound: a study applying automated contour detection. International Journal of Cardiovascular Imaging, 2013, 29, 39-51.	1.5	24
53	Frequency Analysis of the Photoacoustic Signal Generated by Coronary Atherosclerotic Plaque. Ultrasound in Medicine and Biology, 2016, 42, 2017-2025.	1.5	24
54	Optical coherence tomography attenuation imaging for lipid core detection: an ex-vivo validation study. International Journal of Cardiovascular Imaging, 2017, 33, 5-11.	1.5	22

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55	Frequency Tuning of Collapse-Mode Capacitive Micromachined Ultrasonic Transducer. Ultrasonics, 2017, 74, 144-152.	3.9	22
56	Data Processing Pipeline for Lipid Profiling of Carotid Atherosclerotic Plaque with Mass Spectrometry Imaging. Journal of the American Society for Mass Spectrometry, 2019, 30, 1790-1800.	2.8	22
57	Contour segmentation of the intima, media, and adventitia layers in intracoronary OCT images: application to fully automatic detection of healthy wall regions. International Journal of Computer Assisted Radiology and Surgery, 2017, 12, 1923-1936.	2.8	21
58	Emerging Technology Update Intravascular Photoacoustic Imaging of Vulnerable Atherosclerotic Plaque. Interventional Cardiology Review, 2016, 11, 120.	1.6	20
59	Effect of temperature and fixation on the optical properties of atherosclerotic tissue: a validation study of an ex-vivo whole heart cadaveric model. Biomedical Optics Express, 2014, 5, 1038.	2.9	19
60	Photonics in cardiovascular medicine. Nature Photonics, 2015, 9, 626-629.	31.4	19
61	Heartbeat OCT and Motion-Free 3D InÂVivo Coronary Artery Microscopy. JACC: Cardiovascular Imaging, 2016, 9, 622-623.	5.3	19
62	Repeatability Assessment of Intravascular Polarimetry in Patients. IEEE Transactions on Medical Imaging, 2018, 37, 1618-1625.	8.9	18
63	A Broadband Polyvinylidene Difluoride-Based Hydrophone with Integrated Readout Circuit for Intravascular Photoacoustic Imaging. Ultrasound in Medicine and Biology, 2016, 42, 1239-1243.	1.5	17
64	Structured ultrasound microscopy. Applied Physics Letters, 2018, 112, .	3.3	17
65	Photoacoustic imaging for guidance of interventions in cardiovascular medicine. Physics in Medicine and Biology, 2019, 64, 16TR01.	3.0	17
66	Imaging atherosclerotic plaque composition with intracoronary optical coherence tomography. Netherlands Heart Journal, 2009, 17, 448-450.	0.8	16
67	Thermo-elastic optical coherence tomography. Optics Letters, 2017, 42, 3466.	3.3	16
68	Sparse Ultrasound Image Reconstruction From a Shape-Sensing Single-Element Forward-Looking Catheter. IEEE Transactions on Biomedical Engineering, 2018, 65, 2210-2218.	4.2	16
69	Speckle experiments in random lasers. Physical Review E, 2002, 65, 046603.	2.1	15
70	Impact of device geometry on the imaging characteristics of an intravascular photoacoustic catheter. Applied Optics, 2014, 53, 8131.	2.1	15
71	Intracoronary optical coherence tomography and the evaluation of stents. Expert Review of Medical Devices, 2009, 6, 157-167.	2.8	14
72	Frequency domain multiplexing for speckle reduction in optical coherence tomography. Journal of Biomedical Optics, 2012, 17, 0760181.	2.6	14

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73	In vivo intravascular photoacoustic imaging of plaque lipid in coronary atherosclerosis. EuroIntervention, 2019, 15, 452-456.	3.2	14
74	Quantitative Optical Coherence Tomography Tissue-Type Imaging for Lipid-Core Plaque Detection. JACC: Cardiovascular Interventions, 2013, 6, 891-892.	2.9	13
75	Automated Quantitative Assessment of Coronary Calcification Using Intravascular Ultrasound. Ultrasound in Medicine and Biology, 2020, 46, 2801-2809.	1.5	12
76	Motorized capsule for shadow-free OCT imaging and synchronous beam control. Optics Letters, 2019, 44, 3641.	3.3	12
77	OCT-measured plaque free wall angle is indicative for plaque burden: overcoming the main limitation of OCT?. International Journal of Cardiovascular Imaging, 2016, 32, 1477-1481.	1.5	11
78	Preclinical Testing of Frequency-Tunable Capacitive Micromachined Ultrasonic Transducer Probe Prototypes. Ultrasound in Medicine and Biology, 2017, 43, 2079-2085.	1.5	11
79	Automated characterisation of lipid core plaques in vivo by quantitative optical coherence tomography tissue type imaging. EuroIntervention, 2016, 12, 1490-1497.	3.2	11
80	A Micromotor Catheter for Intravascular Optical Coherence Tomography. Engineering, 2015, 1, 015-017.	6.7	10
81	Real-Time Coded Excitation Imaging Using a CMUT-Based Side Looking Array for Intravascular Ultrasound. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2048-2058.	3.0	10
82	Nanosecond SRS fiber amplifier for label-free near-infrared photoacoustic microscopy of lipids. Photoacoustics, 2022, 25, 100331.	7.8	10
83	Intravascular photoacoustic imaging of human coronary atherosclerosis. , 2011, , .		9
84	Quantitative imaging performance of frequency-tunable capacitive micromachined ultrasonic transducer array designed for intracardiac application: Phantom study. Ultrasonics, 2018, 84, 421-429.	3.9	9
85	Simultaneous Morphological and Flow Imaging Enabled by Megahertz Intravascular Doppler Optical Coherence Tomography. IEEE Transactions on Medical Imaging, 2020, 39, 1535-1544.	8.9	9
86	Micro Spectroscopic Photoacoustic (Î¼sPA) imaging of advanced carotid atherosclerosis. Photoacoustics, 2021, 22, 100261.	7.8	9
87	Numerical analysis of astigmatism correction in gradient refractive index lens based optical coherence tomography catheters. Applied Optics, 2012, 51, 5244.	1.8	8
88	3D Imaging with a single-element forward-looking steerable IVUS catheter: initial testing. , 2016, , .		8
89	A front-end ASIC with high-voltage transmit switching and receive digitization for forward-looking intravascular ultrasound. , 2017, , .		8
90	Improving the Performance of a 1-D Ultrasound Transducer Array by Subdicing. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2016, 63, 1161-1171.	3.0	7

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91	Laser-driven resonance of dye-doped oil-coated microbubbles: A theoretical and numerical study. Journal of the Acoustical Society of America, 2017, 141, 2727-2745.	1.1	7
92	Qualitative and quantitative evaluation of dynamic changes in non-culprit coronary atherosclerotic lesion morphology: a longitudinal OCT study. EuroIntervention, 2018, 13, 2190-2200.	3.2	7
93	Ultrasound-guided photoacoustic image reconstruction: image completion and boundary suppression. Journal of Biomedical Optics, 2013, 18, 096017.	2.6	6
94	Measuring submicrometer displacement vectors using high-frame-rate ultrasound imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2015, 62, 1733-1744.	3.0	6
95	Laser-driven resonance of dye-doped oil-coated microbubbles: Experimental study. Journal of the Acoustical Society of America, 2017, 141, 4832-4846.	1.1	6
96	The Prognostic Value of a Validated and Automated Intravascular Ultrasound-Derived Calcium Score. Journal of Cardiovascular Translational Research, 2021, 14, 992-1000.	2.4	6
97	Photoacoustic flow velocity imaging based on complex field decorrelation. Photoacoustics, 2021, 22, 100256.	7.8	6
98	Semi-automated Quantification of Fibrous Cap Thickness in Intracoronary Optical Coherence Tomography. Lecture Notes in Computer Science, 2014, , 78-89.	1.3	6
99	An intravascular photoacoustic imaging catheter. , 2010, , .		5
100	High frame rate ultrasound imaging of human carotid artery dynamics. , 2012, , .		5
101	Neoatherosclerosis development following bioresorbable vascular scaffold implantation in diabetic and non-diabetic swine. PLoS ONE, 2017, 12, e0183419.	2.5	5
102	In-vitro and in-vivo imaging of coronary artery stents with Heartbeat OCT. International Journal of Cardiovascular Imaging, 2020, 36, 1021-1029.	1.5	5
103	Polarimetric Signatures of Vascular Tissue Response to Drug-Eluting Stent Implantation in Patients. JACC: Cardiovascular Imaging, 2020, 13, 2695-2696.	5.3	5
104	Spectroscopic thermo-elastic optical coherence tomography for tissue characterization. Biomedical Optics Express, 2022, 13, 1430.	2.9	5
105	Label-free analytic histology of carotid atherosclerosis by mid-infrared optoacoustic microscopy. Photoacoustics, 2022, 26, 100354.	7.8	5
106	Association of neointimal morphology by optical coherence tomography with rupture of neoatherosclerotic plaque very late after coronary stent implantation.. Proceedings of SPIE, 2013, , .	0.8	4
107	Volumetric ultrasound image reconstruction from a single-element forward-looking intracardiac steerable catheter using 3D adaptive normalized convolution. , 2018, , .		4
108	The Effect of Stent Artefact on Quantification of Plaque Features Using Optical Coherence Tomography (OCT): A Feasibility and Clinical Utility Study. Heart Lung and Circulation, 2020, 29, 874-882.	0.4	4

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109	Robust intravascular optical coherence elastography driven by acoustic radiation pressure. , 2007, , .		3
110	Algorithm optimization for quantitative analysis of intravascular optical coherence tomography data. , 2009, , .		3
111	Plane wave ultrasound imaging with a broadband photoacoustic source. , 2012, , .		3
112	High frame rate ultrasound displacement vector imaging. , 2014, , .		3
113	Autofluorescence: A New NIR onÂtheÂBlock. JACC: Cardiovascular Imaging, 2016, 9, 1315-1317.	5.3	3
114	Optical Tracking of Superficial Dynamics from an Acoustic Radiation Force-Induced Excitation. Ultrasonic Imaging, 2009, 31, 17-30.	2.6	2
115	Contrast-enhanced intravascular ultrasound 3D reconstruction of a vasa vasorum mimicking model. , 2010, , .		2
116	Development of Tissue Characterization Using Optical Coherence Tomography for Defining Coronary Plaque Morphology and the Vascular Responses After Coronary Stent Implantation. Current Cardiovascular Imaging Reports, 2014, 7, 1.	0.6	2
117	Quantifying the effect of subdicing on element vibration in ultrasound transducers. , 2015, , .		2
118	A single-cable PVDF transducer readout IC for intravascular photoacoustic imaging. , 2015, , .		2
119	Photoacoustic imaging of sub-diffraction objects with spectral contrast. Optics Letters, 2017, 42, 191.	3.3	2
120	A Kerfless PVDF Array for Photoacoustic Imaging. , 2018, , .		2
121	Photoacoustic-Enabled RF Ablation Catheters for Lesion Monitoring. , 2018, , .		2
122	Catheter design optimization for practical intravascular photoacoustic imaging (IVPA) of vulnerable plaques. , 2018, , .		2
123	Photoacoustic imaging of coronary arteries. , 2012, , 166-174.		2
124	Fibre optic intravascular measurements of blood flow: A review. Sensors and Actuators A: Physical, 2021, 332, 113162.	4.1	2
125	Optical tracking of superficial dynamics from an acoustic radiation force-induced excitation. Ultrasonic Imaging, 2009, 31, 17-30.	2.6	2
126	Correction of astigmatism in endoscopic OCT for esophageal and coronary imaging. Proceedings of SPIE, 2012, , .	0.8	1

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127	Ultrahigh-speed intravascular optical coherence tomography imaging at 3200 frames per second. Proceedings of SPIE, 2013, , .	0.8	1
128	Mutual radiation impedance of circular CMUTs on a cylinder. , 2016, , .		1
129	Frequency-agility of collapse-mode 1-D CMUT array. , 2016, , .		1
130	A new technique for lipid core plaque detection by optical coherence tomography for prevention of peri-procedural myocardial infarction. Medicine (United States), 2017, 96, e7125.	1.0	1
131	Photoacoustic imaging of RF ablation lesion formation in an ex-vivo passive beating porcine heart model (Conference Presentation). , 2019, , .		1
132	Heartbeat OCT: superfast imaging and elasticity detection. , 2016, , .		1
133	Healthy Vessel Wall Detection Using U-Net in Optical Coherence Tomography. Lecture Notes in Computer Science, 2019, , 184-192.	1.3	1
134	Shadow-free motorized capsule enables accurate beam positioning and sectorized OCT imaging of the esophagus. , 2020, , .		1
135	Intravascular ultrasound chirp imaging. , 2011, , .		0
136	Automatic lipid detection in human coronary atherosclerosis using spectroscopic intravascular photoacoustic imaging. , 2012, , .		0
137	Two contrast detection sequences for bandwidth-limited intravascular ultrasound transducers. , 2012, , .		0
138	Wavelength multiplexing for FD-OCT speckle averaging. Proceedings of SPIE, 2012, , .	0.8	0
139	In-stent neoatherosclerosis: are first generation drug eluting stents different than bare metal stents? An optical coherence tomography study. , 2013, , .		0
140	Differential phase photoacoustic imaging for high-resolution position sensing. , 2015, , .		0
141	Short pulse laser induced thermo-elastic deformation imaging. Proceedings of SPIE, 2017, , .	0.8	0
142	Notice of Removal: Forward-looking IVUS transducer with front-end ASIC for 3D imaging. , 2017, , .		0
143	Notice of Removal: Near-infrared photoacoustic imaging of atrial RF ablation. , 2017, , .		0
144	Interventional photoacoustics: using light to sound out the path to safe, effective interventions. Physics in Medicine and Biology, 2019, 64, 220401.	3.0	0

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145	The relation between pre-existing plaque burden and strut coverage after DES implantation in familial hypercholesterolemia swine: an OCT study. , 2021, , .		0
146	Capturing the breath of an artificial lung model using endoscopic optical coherence elastography. , 2021, , .		0
147	Differential phase analysis for high frame rate photoacoustic vector flow imaging. , 2021, , .		0
148	Photoacoustic identification of lipid patterns in advanced atherosclerotic plaques. , 2021, , .		0
149	Photoacoustic imaging of coronary arteries: Current status and potential clinical applications. , 2012, , 166-174.		0
150	Megahertz intravascular Doppler optical coherence tomography enables simultaneous morphological and flow pattern imaging. , 2019, , .		0
151	Thermo-elastic optical coherence tomography. , 2019, , .		0
152	Heartbeat optical coherence tomography enables accurate in vivo stents imaging: a quantitative image processing study (Conference Presentation). , 2019, , .		0
153	Thermo-elastic optical coherence microscopy. , 2020, , .		0
154	Echoes from Picasso: Explanation of an unusual artefact in optical coherence tomography. Cardiology Journal, 2020, 27, 83-84.	1.2	0
155	Design of a Dual Frequency Probe for Photoacoustic Imaging of the Carotid Artery. , 2020, , .		0
156	Abstract 13819: Is an Adult Familial Hypercholesterolemia, Swine Model Suited to Test Safety and Efficacy of Drug-eluting Coronary Stents?. Circulation, 2020, 142, .	1.6	0
157	Spectroscopic analysis through thermoelastic optical coherence microscopy. , 2021, , .		0