Roberto Merletti

List of Publications by Year in Descending Order

116 papers	6,577 citations	43 h-index	80 g-index
121 ext. papers	7,467 ext. citations	3.1 avg, IF	5.86 L-index

#	Paper	IF	Citations
116	Consensus for experimental design in electromyography (CEDE) project: High-density surface electromyography matrix.. *Journal of Electromyography and Kinesiology*, **2022**, 64, 102656	2.5	4
115	Fundamental Concepts of Bipolar and High-Density Surface EMG Understanding and Teaching for Clinical, Occupational, and Sport Applications: Origin, Detection, and Main Errors. *Sensors*, **2022**, 22, 4150	3.8	4
114	High Density Surface Electromyography Activity of the Lumbar Erector Spinae Muscles and Comfort/Discomfort Assessment in Piano Players: Comparison of Two Chairs.. *Frontiers in Physiology*, **2021**, 12, 743730	4.6	0
113	Monitoring Involuntary Muscle Activity in Acute Patients with Upper Motor Neuron Lesion by Wearable Sensors: A Feasibility Study. *Sensors*, **2021**, 21,	3.8	2
112	Consensus for experimental design in electromyography (CEDE) project: Terminology matrix. *Journal of Electromyography and Kinesiology*, **2021**, 59, 102565	2.5	8
111	Consensus for experimental design in electromyography (CEDE) project: Amplitude normalization matrix. *Journal of Electromyography and Kinesiology*, **2020**, 53, 102438	2.5	64
110	High-density surface electromyography signals during isometric contractions of elbow muscles of healthy humans. *Scientific Data*, **2020**, 7, 397	8.2	3
109	Surface EMG in Clinical Assessment and Neurorehabilitation: Barriers Limiting Its Use. *Frontiers in Neurology*, **2020**, 11, 934	4.1	44
108	Mathematical Techniques for Noninvasive Muscle Signal Analysis and Interpretation **2019**, 95-111		
107	Consensus for experimental design in electromyography (CEDE) project: Electrode selection matrix. *Journal of Electromyography and Kinesiology*, **2019**, 48, 128-144	2.5	43
106	Surface Electromyography (sEMG) **2018**, 1-22		3
105	Comparison of chairs based on HDsEMG of back muscles, biomechanical and comfort indices, for violin and viola players: A short-term study. *Journal of Electromyography and Kinesiology*, **2018**, 42, 92-103	2.5	5
104	Analysis of High-Density Surface EMG and Finger Pressure in the Left Forearm of Violin Players: A Feasibility Study. *Medical Problems of Performing Artists*, **2017**, 32, 139-151	0.6	3
103	Detection and Conditioning of Surface EMG Signals **2016**, 1-37		7
102	Surface EMG Decomposition **2016**, 180-209		2
101	EMG of Electrically Stimulated Muscles **2016**, 311-332		3
100	Surface EMG in Ergonomics and Occupational Medicine **2016**, 361-391		5

99	Applications in Proctology and Obstetrics **2016**, 392-407		1
98	EMG and Posture in Its Narrowest Sense **2016**, 408-439		
97	EMG in Exercise Physiology and Sports **2016**, 501-539		4
96	Techniques for Information Extraction from the Surface EMG Signalhigh-Density Surface EMG **2016**, 126-157		5
95	Spatial distribution of surface EMG on trapezius and lumbar muscles of violin and cello players in single note playing. *Journal of Electromyography and Kinesiology*, **2016**, 31, 144-153	2.5	13
94	The correct episiotomy: Does it exist?. *International Urogynecology Journal*, **2016**, 27, 161-2	2	1
93	Pelvic Floor EMG: Principles, Techniques, and Applications **2016**, 83-99		2
92	Examination of Poststroke Alteration in Motor Unit Firing Behavior Using High-Density Surface EMG Decomposition. *IEEE Transactions on Biomedical Engineering*, **2015**, 62, 1242-52	5	62
91	Reply to De Luca, Nawab, and Kline: The proposed method to validate surface EMG signal decomposition remains problematic. *Journal of Applied Physiology*, **2015**, 118, 1085	3.7	12
90	Characterization of the motor units of the external anal sphincter in pregnant women with multichannel surface EMG. *International Urogynecology Journal*, **2014**, 25, 1097-103	2	17
89	Effect of vaginal delivery on the external anal sphincter muscle innervation pattern evaluated by multichannel surface EMG: results of the multicentre study TASI-2. *International Urogynecology Journal*, **2014**, 25, 1491-9	2	32
88	Automatic detection of motor unit innervation zones of the external anal sphincter by multichannel surface EMG. *Journal of Electromyography and Kinesiology*, **2014**, 24, 860-7	2.5	26
87	The extraction of neural strategies from the surface EMG: an update. *Journal of Applied Physiology*, **2014**, 117, 1215-30	3.7	252
86	Compression of high-density EMG signals for trapezius and gastrocnemius muscles. *BioMedical Engineering OnLine*, **2014**, 13, 25	4.1	7
85	Uneven spatial distribution of surface EMG: what does it mean?. *European Journal of Applied Physiology*, **2013**, 113, 887-94	3.4	32
84	Design of a portable, intrinsically safe multichannel acquisition system for high-resolution, real-time processing HD-sEMG. *IEEE Transactions on Biomedical Engineering*, **2013**, 60, 2242-52	5	20
83	Motor unit firing pattern of vastus lateralis muscle in type 2 diabetes mellitus patients. *Muscle and Nerve*, **2013**, 48, 806-13	3.4	37
82	Multi-channel electromyography during maximal isometric and dynamic contractions. *Journal of Electromyography and Kinesiology*, **2013**, 23, 302-10	2.5	11

81	Do surface electromyograms provide physiological estimates of conduction velocity from the medial gastrocnemius muscle?. *Journal of Electromyography and Kinesiology*, **2013**, 23, 319-25	2.5	15
80	Surface Electromyogram Detection **2013**, 113-136		
79	Outlier detection in high-density surface electromyographic signals. *Medical and Biological Engineering and Computing*, **2012**, 50, 79-89	3.1	36
78	Spatial EMG potential distribution pattern of vastus lateralis muscle during isometric knee extension in young and elderly men. *Journal of Electromyography and Kinesiology*, **2012**, 22, 74-9	2.5	40
77	Atlas of Muscle Innervation Zones **2012**,		153
76	Surface electromyography features in manual workers affected by carpal tunnel syndrome. *Muscle and Nerve*, **2012**, 45, 873-82	3.4	5
75	Recruitment of motor units in the medial gastrocnemius muscle during human quiet standing: is recruitment intermittent? What triggers recruitment?. *Journal of Neurophysiology*, **2012**, 107, 666-76	3.2	44
74	Applications of sEMG in Dynamic Conditions, Ergonomics, Sports, and Obstetrics **2012**, 71-79		
73	Features of the Two-Dimensional sEMG Signal: EMG Feature Imaging **2012**, 61-69		
72	EMG Imaging: Geometry and Anatomy of the Electrode-Muscle System **2012**, 39-47		
71	Reliability of surface EMG matrix in locating the innervation zone of upper trapezius muscle. *Journal of Electromyography and Kinesiology*, **2011**, 21, 827-33	2.5	22
70	Spinal involvement and muscle cramps in electrically elicited muscle contractions. *Artificial Organs*, **2011**, 35, 221-5	2.6	5
69	Postural activation of the human medial gastrocnemius muscle: are the muscle units spatially localised?. *Journal of Physiology*, **2011**, 589, 431-43	3.9	83
68	Insights gained into the interpretation of surface electromyograms from the gastrocnemius muscles: A simulation study. *Journal of Biomechanics*, **2011**, 44, 1096-103	2.9	64
67	Solving EMG-force relationship using Particle Swarm Optimization. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 3861-4	0.9	10
66	Advances in surface EMG: recent progress in clinical research applications. *Critical Reviews in Biomedical Engineering*, **2010**, 38, 347-79	1.1	71
65	Advances in surface EMG: recent progress in detection and processing techniques. *Critical Reviews in Biomedical Engineering*, **2010**, 38, 305-45	1.1	106
64	Is the stabilization of quiet upright stance in humans driven by synchronized modulations of the activity of medial and lateral gastrocnemius muscles?. *Journal of Applied Physiology*, **2010**, 108, 85-97	3.7	36

63	Decoding the neural drive to muscles from the surface electromyogram. *Clinical Neurophysiology*, **2010**, 121, 1616-23	4.3	216
62	Repeatability of innervation zone identification in the external anal sphincter muscle. *Neurourology and Urodynamics*, **2010**, 29, 449-57	2.3	18
61	Automatic segmentation of surface EMG images: Improving the estimation of neuromuscular activity. *Journal of Biomechanics*, **2010**, 43, 2149-58	2.9	71
60	Analysis of intramuscular electromyogram signals. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2009**, 367, 357-68	3	71
59	Technology and instrumentation for detection and conditioning of the surface electromyographic signal: state of the art. *Clinical Biomechanics*, **2009**, 24, 122-34	2.2	229
58	A bi-dimensional index for the selective assessment of myoelectric manifestations of peripheral and central muscle fatigue. *Journal of Electromyography and Kinesiology*, **2009**, 19, 851-63	2.5	60
57	Automatic localisation of innervation zones: a simulation study of the external anal sphincter. *Journal of Electromyography and Kinesiology*, **2009**, 19, e413-21	2.5	20
56	Estimating motor unit discharge patterns from high-density surface electromyogram. *Clinical Neurophysiology*, **2009**, 120, 551-62	4.3	171
55	Compression of multidimensional biomedical signals with spatial and temporal codebook-excited linear prediction. *IEEE Transactions on Biomedical Engineering*, **2009**, 56, 2604-10	5	11
54	Adjustments differ among low-threshold motor units during intermittent, isometric contractions. *Journal of Neurophysiology*, **2009**, 101, 350-9	3.2	51
53	Detection of individual motor units of the puborectalis muscle by non-invasive EMG electrode arrays. *Journal of Electromyography and Kinesiology*, **2008**, 18, 382-9	2.5	11
52	Effect of electrode array position and subcutaneous tissue thickness on conduction velocity estimation in upper trapezius muscle. *Journal of Electromyography and Kinesiology*, **2008**, 18, 628-36	2.5	17
51	Analysis of motor units with high-density surface electromyography. *Journal of Electromyography and Kinesiology*, **2008**, 18, 879-90	2.5	191
50	Assessment of force and fatigue in isometric contractions of the upper trapezius muscle by surface EMG signal and perceived exertion scale. *Gait and Posture*, **2008**, 28, 179-86	2.6	101
49	Separation of propagating and non propagating components in surface EMG. *Biomedical Signal Processing and Control*, **2008**, 3, 126-137	4.9	8
48	Reliability of a novel neurostimulation method to study involuntary muscle phenomena. *Muscle and Nerve*, **2008**, 37, 90-100	3.4	26
47	Motor units in cranial and caudal regions of the upper trapezius muscle have different discharge rates during brief static contractions. *Acta Physiologica*, **2008**, 192, 453	5.6	
46	Influence of motor unit properties on the size of the simulated evoked surface EMG potential. *Experimental Brain Research*, **2006**, 169, 37-49	2.3	66

45	Basic Physiology and Biophysics of EMG Signal Generation **2005**, 1-25	22
44	Decomposition of Intramuscular EMG Signals **2005**, 47-80	2
43	Needle and Wire Detection Techniques **2005**, 27-46	9
42	Biophysics of the Generation of EMG Signals **2005**, 81-105	16
41	Detection and Conditioning of the Surface EMG Signal **2005**, 107-131	17
40	Single-Channel Techniques for Information Extraction from the Surface EMG Signal **2005**, 133-168	5
39	Multi-Channel Techniques for Information Extraction from the Surface EMG **2005**, 169-203	1
38	EMG Modeling and Simulation **2005**, 205-231	5
37	Myoelectric Manifestations of Muscle Fatigue **2005**, 233-258	12
36	Advanced Signal Processing Techniques **2005**, 259-304	4
35	Surface Mechanomyogram **2005**, 305-322	2
34	Surface EMG Applications in Neurology **2005**, 323-342	1
33	Applications in Exercise Physiology **2005**, 365-379	
32	Applications in Movement and Gait Analysis **2005**, 381-401	1
31	Applications in Rehabilitation Medicine and Related Fields **2005**, 403-433	
30	Biofeedback Applications **2005**, 435-451	2
29	Control of Powered Upper Limb Prostheses **2005**, 453-475	11
28	Applications in Ergonomics **2005**, 343-363	12

27	Time-frequency analysis and estimation of muscle fiber conduction velocity from surface EMG signals during explosive dynamic contractions. *Journal of Neuroscience Methods*, **2005**, 142, 267-74	3	31
26	Influence of amplitude cancellation on the simulated surface electromyogram. *Journal of Applied Physiology*, **2005**, 98, 120-31	3.7	287
25	Multichannel surface EMG for the non-invasive assessment of the anal sphincter muscle. *Digestion*, **2004**, 69, 112-22	3.6	63
24	A surface EMG generation model with multilayer cylindrical description of the volume conductor. *IEEE Transactions on Biomedical Engineering*, **2004**, 51, 415-26	5	154
23	Assessment of average muscle fiber conduction velocity from surface EMG signals during fatiguing dynamic contractions. *IEEE Transactions on Biomedical Engineering*, **2004**, 51, 1383-93	5	100
22	Blind separation of linear instantaneous mixtures of nonstationary surface myoelectric signals. *IEEE Transactions on Biomedical Engineering*, **2004**, 51, 1555-67	5	62
21	Reproducibility of muscle-fiber conduction velocity estimates using multichannel surface EMG techniques. *Muscle and Nerve*, **2004**, 29, 282-91	3.4	35
20	Myoelectric manifestations of fatigue during exposure to hypobaric hypoxia for 12 days. *Muscle and Nerve*, **2004**, 30, 618-25	3.4	16
19	Estimation of average muscle fiber conduction velocity from two-dimensional surface EMG recordings. *Journal of Neuroscience Methods*, **2004**, 134, 199-208	3	47
18	A new method for the extraction and classification of single motor unit action potentials from surface EMG signals. *Journal of Neuroscience Methods*, **2004**, 136, 165-77	3	125
17	The extraction of neural strategies from the surface EMG. *Journal of Applied Physiology*, **2004**, 96, 1486-95	3.7	988
16	M-wave properties during progressive motor unit activation by transcutaneous stimulation. *Journal of Applied Physiology*, **2004**, 97, 545-55	3.7	44
15	Effect of side dominance on myoelectric manifestations of muscle fatigue in the human upper trapezius muscle. *European Journal of Applied Physiology*, **2003**, 90, 480-8	3.4	37
14	Selectivity of spatial filters for surface EMG detection from the tibialis anterior muscle. *IEEE Transactions on Biomedical Engineering*, **2003**, 50, 354-64	5	49
13	A novel approach for estimating muscle fiber conduction velocity by spatial and temporal filtering of surface EMG signals. *IEEE Transactions on Biomedical Engineering*, **2003**, 50, 1340-51	5	50
12	The linear electrode array: a useful tool with many applications. *Journal of Electromyography and Kinesiology*, **2003**, 13, 37-47	2.5	204
11	Effect of age on muscle functions investigated with surface electromyography. *Muscle and Nerve*, **2002**, 25, 65-76	3.4	128
10	Surface EMG crosstalk between knee extensor muscles: experimental and model results. *Muscle and Nerve*, **2002**, 26, 681-95	3.4	141

9	Standardising surface electromyogram recordings for assessment of activity and fatigue in the human upper trapezius muscle. *European Journal of Applied Physiology*, **2002**, 86, 469-78	3.4	118
8	Upper trapezius muscle mechanomyographic and electromyographic activity in humans during low force fatiguing and non-fatiguing contractions. *European Journal of Applied Physiology*, **2002**, 87, 327-36	3.4	71
7	Influence of anatomical, physical, and detection-system parameters on surface EMG. *Biological Cybernetics*, **2002**, 86, 445-56	2.8	246
6	Assessment of single motor unit conduction velocity during sustained contractions of the tibialis anterior muscle with advanced spike triggered averaging. *Journal of Neuroscience Methods*, **2002**, 115, 1-12	3	113
5	Evaluation of intra-muscular EMG signal decomposition algorithms. *Journal of Electromyography and Kinesiology*, **2001**, 11, 175-87	2.5	51
4	Myoelectric and mechanical manifestations of muscle fatigue in voluntary contractions. *Journal of Orthopaedic and Sports Physical Therapy*, **1996**, 24, 342-53	4.2	117
3	Surface myoelectric signal cross-talk among muscles of the leg. *Electroencephalography and Clinical Neurophysiology*, **1988**, 69, 568-75		244
2	Size and X-ray density of normal and denervated muscles of the human leg and forearm. *International Rehabilitation Medicine*, **1986**, 8, 82-9		2
1	Median frequency of the myoelectric signal. Effects of muscle ischemia and cooling. *European Journal of Applied Physiology and Occupational Physiology*, **1984**, 52, 258-65		116