Cedric Plesse

List of Publications by Year
in descending order

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91 papers	2,959 citations	117571 34 h-index	175177 52 g-index
93 all docs	93 docs citations	93 times ranked	2998 citing authors

#	Article	IF	Citations
1	Graphitic carbon nitride nanosheet electrode-based high-performance ionic actuator. Nature Communications, 2015, 6, 7258.	5.8	211
2	Long-life air working conducting semi-IPN/ionic liquid based actuator. Synthetic Metals, 2004, 142, 287-291.	2.1	154
3	Piezoionic mechanoreceptors: Force-induced current generation in hydrogels. Science, 2022, 376, 502-507.	6.0	128
4	Demonstrating kHz Frequency Actuation for Conducting Polymer Microactuators. Advanced Functional Materials, 2014, 24, 4851-4859.	7.8	96
5	Processable Star-Shaped Molecules with Triphenylamine Core as Hole-Transporting Materials: Experimental and Theoretical Approach. Journal of Physical Chemistry C, 2012, 116, 3765-3772.	1.5	95
6	Dynamic crosslinked rubbers for a green future: A material perspective. Materials Science and Engineering Reports, 2020, 141, 100561.	14.8	90
7	Flexible Solid Polymer Electrolytes Based on Nitrile Butadiene Rubber/Poly(ethylene oxide) Interpenetrating Polymer Networks Containing Either LiTFSI or EMITFSI. Macromolecules, 2011, 44, 9683-9691.	2.2	88
8	Stretchable and Transparent Conductive PEDOT:PSSâ€Based Electrodes for Organic Photovoltaics and Strain Sensors Applications. Advanced Functional Materials, 2020, 30, 2001251.	7.8	88
9	Synthesis and characterization of conducting interpenetrating polymer networks for new actuators. Polymer, 2005, 46, 7771-7778.	1.8	84
10	Robust solid polymer electrolyte for conducting IPN actuators. Smart Materials and Structures, 2013, 22, 104005.	1.8	79
11	In search of better electroactive polymer actuator materials: PPy versus PEDOT versus PEDOTâ€“PPy composites. Smart Materials and Structures, 2013, 22, 104006.	1.8	76
12	Electrochemical behaviour of poly(3,4-ethylenedioxythiophene) in a room-temperature ionic liquid. Electrochemistry Communications, 2003, 5, 613-617.	2.3	75
13	Ions transfer mechanisms during the electrochemical oxidation of poly(3,4-ethylenedioxythiophene) in 1-ethyl-3-methylimidazolium bis((trifluoromethyl)sulfonyl)amide ionic liquid. Electrochemistry Communications, 2004, 6, 299-305.	2.3	72
14	Conducting and Stretchable PEDOT:PSS Electrodes: Role of Additives on Self-Assembly, Morphology, and Transport. ACS Applied Materials & Interfaces, 2019, 11, 17570-17582.	4.0	72
15	A first truly all-solid state organic electrochromic device based on polymeric ionic liquids. Chemical Communications, 2014, 50, 3191-3193.	2.2	68
16	Ionic electroactive polymer artificial muscles in space applications. Scientific Reports, 2014, 4, 6913.	1.6	64
17	Stretchable composite monolayer electrodes for low voltage dielectric elastomer actuators. Sensors and Actuators B: Chemical, 2018, 261, 135-143.	4.0	64
18	Conducting IPN actuators: From polymer chemistry to actuator with linear actuation. Synthetic Metals, 2006, 156, 1299-1304.	2.1	62

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19	Feasibility of conducting semi-interpenetrating networks based on a poly(ethylene oxide) network and poly(3,4-ethylenedioxythiophene) in actuator design. Journal of Applied Polymer Science, 2003, 90, 3569-3577.	1.3	61
20	Conducting interpenetrating polymer network sized to fabricate microactuators. Applied Physics Letters, 2011, 98, .	1.5	60
21	Truly solid state electrochromic devices constructed from polymeric ionic liquids as solid electrolytes and electrodes formulated by vapor phase polymerization of 3,4-ethylenedioxythiophene. Polymer, 2014, 55, 3385-3396.	1.8	57
22	Electro-active Interpenetrating Polymer Networks actuators and strain sensors: Fabrication, position control and sensing properties. Sensors and Actuators B: Chemical, 2014, 193, 82-88.	4.0	52
23	Pushing the Limits of Flexibility and Stretchability of Solar Cells: A Review. Advanced Materials, 2021, 33, e2101469.	11.1	51
24	Poly(ethylene oxide)/polybutadiene based IPNs synthesis and characterization. Polymer, 2007, 48, 696-703.	1.8	50
25	Conducting polymer artificial muscle fibres: toward an open air linear actuation. Chemical Communications, 2010, 46, 2910.	2.2	50
26	Relaxation kinetics of poly(3,4-ethylenedioxythiophene) in 1-ethyl-3-methylimidazolium bis((trifluoromethyl)sulfonyl)amide ionic liquid during potential step experiments. Electrochimica Acta, 2005, 50, 1515-1522.	2.6	46
27	Highly Conductive, Photolithographically Patternable Ionogels for Flexible and Stretchable Electrochemical Devices. ACS Applied Materials & Interfaces, 2018, 10, 21601-21611.	4.0	45
28	Smarter Actuator Design with Complementary and Synergetic Functions. Advanced Materials, 2015, 27, 4418-4422.	11.1	44
29	Top-down Approach for the Direct Synthesis, Patterning, and Operation of Artificial Micromuscles on Flexible Substrates. ACS Applied Materials & Interfaces, 2016, 8, 1559-1564.	4.0	41
30	Thin ink-jet printed trilayer actuators composed of PEDOT:PSS on interpenetrating polymer networks. Sensors and Actuators B: Chemical, 2018, 258, 1072-1079.	4.0	40
31	Poly(3,4â€ethylenedioxythiophene):Poly(styrene sulfonate)/Polyethylene Oxide Electrodes with Improved Electrical and Electrochemical Properties for Soft Microactuators and Microsensors. Advanced Electronic Materials, 2019, 5, 1800948.	2.6	39
32	Poly(3,4â€ethylenedioxythiophene)â€containing semiâ€interpenetrating polymer networks: a versatile concept for the design of optical or mechanical electroactive devices. Polymer International, 2010, 59, 313-320.	1.6	38
33	Conducting electrospun fibres with polyanionic grafts as highly selective, label-free, electrochemical biosensor with a low detection limit for non-Hodgkin lymphoma gene. Biosensors and Bioelectronics, 2018, 100, 549-555.	5.3	38
34	Polyethylene oxideâ€“polytetrahydrofuraneâ€“PEDOT conducting interpenetrating polymer networks for high speed actuators. Smart Materials and Structures, 2011, 20, 124002.	1.8	36
35	Charging/discharging kinetics of poly(3,4-ethylenedioxythiophene) in 1-ethyl-3-methylimidazolium bis-(trifluoromethylsulfonyl)imide ionic liquid under galvanostatic conditions. Electrochimica Acta, 2005, 50, 4222-4229.	2.6	35
36	Electrospun rubber fibre mats with electrochemically controllable pore sizes. Journal of Materials Chemistry B, 2015, 3, 4249-4258.	2.9	29

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37	Self-contained tubular bending actuator driven by conducting polymers. Sensors and Actuators A: Physical, 2016, 249, 45-56.	2.0	29
38	New star-shaped molecules derived from thieno[3,2-b]thiophene unit and triphenylamine. Tetrahedron Letters, 2010, 51, 6673-6676.	0.7	26
39	Synthesis of novel families of conductive cationic poly(ionic liquid)s and their application in all-polymer flexible pseudo-supercapacitors. Electrochimica Acta, 2018, 281, 777-788.	2.6	26
40	Tailorable, 3D structured and micro-patternable ionogels for flexible and stretchable electrochemical devices. Journal of Materials Chemistry C, 2019, 7, 256-266.	2.7	26
41	Ultrathin electrochemically driven conducting polymer actuators: fabrication and electrochemomechanical characterization. Electrochimica Acta, 2018, 265, 670-680.	2.6	23
42	Linear Artificial Muscle Based on Ionic Electroactive Polymer: A Rational Design for Openâ€Air and Vacuum Actuation. Advanced Materials Technologies, 2019, 4, 1800519.	3.0	22
43	Polybutadiene/poly(ethylene oxide) based IPNs, Part II: Mechanical modelling and LiClO4 loading as tools for IPN morphology investigation. Polymer, 2007, 48, 7476-7483.	1.8	21
44	Study of the piezoionic effect and influence of electrolyte in conducting polymer based soft strain sensors. Multifunctional Materials, 2019, 2, 045002.	2.4	21
45	Facile route to prepare film of poly(3,4-ethylene dioxythiophene)-TiO2 nanohybrid for solar cell application. Thin Solid Films, 2011, 519, 1876-1881.	0.8	19
46	Investigations of ionic liquids on the infrared electroreflective properties of poly(3,4-ethylenedioxythiophene). Solar Energy Materials and Solar Cells, 2018, 177, 23-31.	3.0	17
47	Long-Life Air Working Semi-IPN/Ionic Liquid: New Precursor of Artificial Muscles. Molecular Crystals and Liquid Crystals, 2006, 448, 95/[697]-102/[704].	0.4	15
48	Asymmetric PEDOT:PSS Trilayers as Actuating and Sensing Linear Artificial Muscles. Advanced Materials Technologies, 2021, 6, 2001063.	3.0	12
49	Actuation and Sensing properties of Electroactive Polymer Whiskers. Procedia Computer Science, 2011, 7, S4-S7.	1.2	11
50	Influence of the poly(ethylene oxide)/polybutadiene IPN morphology on the ionic conductivity of ionic liquid. European Polymer Journal, 2013, 49, 2670-2679.	2.6	11
51	Transparent stretchable capacitive touch sensor grid using ionic liquid electrodes. Extreme Mechanics Letters, 2019, 33, 100574.	2.0	11
52	Ionic liquid-based semi-interpenetrating polymer network (sIPN) membranes for CO2 separation. Separation and Purification Technology, 2021, 274, 118437.	3.9	11
53	Characterization and dynamic charge dependent modeling of conducting polymer trilayer bending. Smart Materials and Structures, 2016, 25, 115044.	1.8	10
54	Nonlinear dynamic modeling of ultrathin conducting polymer actuators including inertial effects. Smart Materials and Structures, 2018, 27, 115032.	1.8	10

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55	Versatile methods for improving the mechanical properties of fullerene and non-fullerene bulk heterojunction layers to enable stretchable organic solar cells. Journal of Materials Chemistry C, 2022, 10, 3375-3386.	2.7	10
56	Synthesis and Characterization of IPNs for Electrochemical Actuators. Advances in Science and Technology, 0, , .	0.2	9
57	Impermeable and Compliant: SIBS as a Promising Encapsulant for Ionically Electroactive Devices. Robotics, 2019, 8, 60.	2.1	9
58	Solid state dye-sensitized solar cells based on polymeric ionic liquid with free imidazolium cation. Electronic Materials Letters, 2014, 10, 209-212.	1.0	8
59	Synergetic PEDOT degradation during a reactive ion etching process. Sensors and Actuators B: Chemical, 2016, 229, 635-645.	4.0	8
60	Ion Transport in Polymer Composites with Non-Uniform Distributions of Electronic Conductors. Electrochimica Acta, 2017, 247, 149-162.	2.6	8
61	Interpenetrating polymer network (IPN) as tool for tuning electromechanical properties of electrochemical actuator operating in open-air. Sensors and Actuators B: Chemical, 2018, 256, 294-303.	4.0	8
62	Electro-interpenetration as tool for high strain trilayer conducting polymer actuator. Smart Materials and Structures, 2021, 30, 025041.	1.8	7
63	Conducting IPN Fibers: A New Design for Linear Actuation in Open Air. Advances in Science and Technology, 0, , .	0.2	6
64	Conducting IPN actuators for biomimetic vision system. Proceedings of SPIE, 2011, , .	0.8	6
65	Nonlinear Two-Dimensional Transmission Line Models for Electrochemically Driven Conducting Polymer Actuators. IEEE/ASME Transactions on Mechatronics, 2017, 22, 705-716.	3.7	6
66	Toward an Electroactive Polymer-Based Soft Microgripper. IEEE Access, 2021, 9, 32188-32195.	2.6	6
67	Ionofibers: Ionically Conductive Textile Fibers for Conformal iâ€Textiles. Advanced Materials Technologies, 2022, 7, .	3.0	6
68	Spontaneous styrene sulfonate polymerization in Langmuir films: evidence for an anionic mechanism. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2004, 244, 121-130.	2.3	5
69	PEDOT Based Conducting IPN Actuators: Effects of Electrolyte on Actuation. Advances in Science and Technology, 0, , .	0.2	5
70	Photopolymerizable Ionogel with Healable Properties Based on Dioxaborolane Vitrimer Chemistry. Gels, 2022, 8, 381.	2.1	5
71	Actuator based on poly(3,4-ethylenedioxythiophene)/PEO/elastomer IPNs. , 2004, , .		4
72	Patterning process and actuation in open air of micro-beam actuator based on conducting IPNs. Proceedings of SPIE, 2012, , .	0.8	4

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73	Microfabricated PEDOT trilayer actuators: synthesis, characterization, and modeling. , 2017, , .		4
74	Conducting interpenetrating polymer network to sense and actuate: Measurements and modeling. Sensors and Actuators A: Physical, 2018, 272, 325-333.	2.0	4
75	Printed PEDOT:PSS Trilayer: Mechanism Evaluation and Application in Energy Storage. Materials, 2020, 13, 491.	1.3	4
76	Piezoionic sensors based on formulated PEDOT:PSS and Aquivion^{Â®} for ionic polymerâ€“polymer composites. Smart Materials and Structures, 2021, 30, 105027.	1.8	4
77	PEDOT:PSS-based micromuscles and microsensors fully integrated in flexible chips. Smart Materials and Structures, 2020, 29, 09LT01.	1.8	4
78	A versatile conducting interpenetrating polymer network for sensing and actuation. , 2017, , .		3
79	Electromechanical Model of a Conducting Polymer Transducer, Application to a Soft Gripper. IEEE Access, 2019, 7, 155209-155218.	2.6	3
80	Patterning innovative conducting interpenetrating polymer network by dry etching. , 2014, , .		2
81	High speed electromechanical response of ionic microactuators. Proceedings of SPIE, 2015, , .	0.8	2
82	Evaluating performance of wet unencapsulated PEDOT trilayer actuators operating in air and water. Multifunctional Materials, 2019, 2, 014003.	2.4	2
83	All-solid state ionic actuators based on polymeric ionic liquids and electronic conducting polymers. , 2018, , .		2
84	Polypyrrole Derivatives in the Design of Electrochemically Driven Actuators. Mini-Reviews in Organic Chemistry, 2015, 12, 414-423.	0.6	2
85	Stacking trilayers to increase force generation. , 2015, , .		1
86	Conducting Polymers as EAPs: How to Start Experimenting with Them. , 2016, , 413-436.		1
87	Conducting IPNs and Ionic Liquids: Applications to Electroactive Polymer Devices. , 2015, , 297-321.		1
88	Micro-beam actuator based on conducting interpenetrating polymer networks: From patterning process to actuation in open air. , 2011, , .		0
89	Conducting Polymers as EAPs: How to Start Experimenting with Them. , 2016, , 1-25.		0
90	Behavior of ionic conducting IPN actuators in simulated space conditions. Proceedings of SPIE, 2016, , .	0.8	0

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91	Toward electroactive catheter design using conducting interpenetrating polymer networks actuators. , 2018, , .		0