

MICREAgents Publications

Title	Author	Journal	Issue	Publisher	Year	PP	Open Access	DOI
MICREAgents Period 1(1/09/2012- 31/08/2013)								
Microscale Chemically Reactive Electronic Agents	McCaskill, JS, v. Kiedrowski, G, Oehm, J, Mayr, P, Cronin, L, Willner, I, Herrmann, A, Rasmussen, S, Stepanek, F, Packard, NH, Wills, PR	IJUC	vol 8, no 4	Old City Publishing	2012	289-299	yes	http://www.oldcitypublishing.com/IJUC/IJUCcontents/IJUCv8n4contents.html
Encapsulation stability and temperature-dependent release kinetics from hydrogel-immobilised liposomes	Ullrich, M, Hanuš, J, Dohnal, J, Štěpánek, F	Journal of Colloid and Interface Science	vol 394	Elsevier	2013	380–385	yes	DOI:10.1016/j.jcis.2012.11.016
Development of spray-dried chitosan microcarriers for nanoparticle delivery	Tokárová, V, Kašpar, O, Knejzlík, Z, Ulbrich, P, Štěpánek, F	Powder Technology	vol 235	Elsevier	2013	797–805	yes	DOI:10.1016/j.powtec.2012.12.005
Remotely Controlled Diffusion from Magnetic Liposome Microgels	Hanuš, J, Ullrich, M, Dohnal, J, Singh, M, Štěpánek, F	Langmuir	29 (13)	American Chemical Society	2013	4381 – 4387	yes	DOI:10.1021/la4000318
Biologically triggered liberation of sub-micron particles from alginate	Čejková J, Haufová P, Gorný D, Hanuš J,	J. Mater. Chem. B	1	RSC	2013	5456-5461	yes	DOI:10.1039/c3tb20388c

microcapsules	Štěpánek F							
Remote control of diffusion from magnetic hollow silica microspheres	Kovačik ., Singh ., Štěpánek F	Chem. Eng. J	232	Elsevier	2013	591-598	yes	DOI:10.1016/j.cej.2013.07.122
“Giant Surfactants” Created by the Fast and Efficient Functionalization of a DNA Tetrahedron with a Temperature-Responsive Polymer	Wilks,T. R., Bath, J., de Vries, J. W., Raymond, J. E., Herrmann, A., Turberfield, A. J., O’Reilly, R. K.	ACS Nano	7 (10)	ACS, published online	2013	8561 – 8572	yes	DOI: 10.1021/nn402642a
Autonomous Control of Interfacial Electron Transfer and the Activation of DNA Machines by an Oscillatory pH system	Lu, CH, Qi, XJ, Shimron, S, Yang, HH, Willner, I	System. Nano Lett.	Volume 13, Issue 10	ACS	2013	4920 – 4924	yes	DOI:10.1021/nl402873y
Introduction to recent developments in Living Technology	Bedau, MA, McCaskill, JS, Packard, NH, Parke, E, Rasmussen, S	Artificial Life	vol 19, no 3&4	MIT Press	2013	291-299		DOI: 10.1162/ARTL_e_00121
A collection of robust methodologies for the preparation of asymmetric hybrid Mn Anderson polyoxometalates for multifunctional materials	Yvon, C, Macdonell, A, Buchwald, S, Surman, AJ, Follet, N, Alex, J, De-Liang Long, DL, Cronin, L	Chem. Sci.	4	RSC	2013	3810-3817	yes	DOI: 10.1039/C3SC51618K

Polyoxometalate {W ₁₈ O ₅₆ XO ₆ } Clusters with Embedded Redox-Active Main-Group Templates as Localized Inner-Cluster Radicals	Vilà-Nadal, L, Peuntinger, K, Busche, C, Yan, J, Lüders, D, Long, DL, Poblet, JM, Guldi, DM, Cronin, L	Chem. Int. Ed	125	Wiley	2013	9877-9881	yes	DOI: 10.1002/anie.201303126
Towards Polyoxometalate-cluster based nano-electronics	Vilà-Nadal, L, Mitchel, SG, Markov, S, Busche, S, Georgiev, V, Aseov, A, Cronin, L	Chem. Eur. J.	ref C3016 31e	Wiley	2013	1650 2-1651 1	yes	DOI: 10.1002/chem.201301631
MICREAgents Period 2 (1/09/2013 - 31/08/2015)								
Semiconducting Single-Walled Carbon Nanotubes on Demand by Polymer Wrapping	Gomulya W, Diaz Costanzo G, Figueiredo de Carvalho EJ, Bisri SZ, Derenskyi V, Fritsch M, Fröhlich N, Allard S, Gordiichuk P, Herrmann A, Marrink SJ, dos Santos MC, Scherf U, Loi M	Adv. Mater.	25	Wiley	2013	2948-2956	yes	DOI: 10.1002/adma.201300267
Solid-state biophotovoltaic cells containing photosystem I	Gordiichuk PI, Wetzelaer GJAH, Rimmerman D, Gruszka A, de Vries JW, Saller M, Gautier D, Catarci S, Pesce D, Richter S, Blom PWM, Herrmann A	Adv. Mater.	26	Wiley	2014	4863-4869		DOI: 10.1002/adma.201401135

Solvent-free liquid crystals and liquids from DNA	Liu K, Shuai M, Chen D, Tuchband M, Gerasimov J Y, Su J, Liu Q, Zajaczkowski W, Pisula W, Müllen K, Clark N A, Herrmann A	Chem. Eur. J.	21	Wiley	2015	4898-4903		DOI: 10.1002/chem.201500159
Solvent-free Liquid Crystals and Liquids Based on Genetically Engineered Supercharged Polypeptides with Elastic Properties	Liu K, Pesce D, Ma C, Tuchband M, Shuai M, Chen D, Su J, Liu Q, Gerasimov J Y, Anke Kolbe, Zajaczkowski W, Pisula W, Müllen K, Clark N A, Herrmann A	Adv. Mater.	27	Wiley	2015	2459 – 2465		DOI: 10.1002/adma.201405182
Thermotropic liquid crystals from biomolecules	Liu K, Chen D, Marcozzi A, Zheng L, Su J, Pesce D, Zajaczkowski W, Kolbe A, Pisula W, Müllen K, Clark NA, Herrmann A	PNAS	11	United States National Academy of Sciences	2014	1859 6-1860 0		DOI: 10.1073/pnas.1421257111
Nucleic Acid Chemistry in the Organic Phase: From Functionalized Oligonucleotides to DNA Side Chain Polymers	Liu K, Zheng L, Liu Q, de Vries JW, Gerasimov JY, Herrmann A	J. Am. Chem. Soc.	136	Amer. Chemical. Soc.	2014	1425 5–1426 2		DOI: 10.1021/ja5080486
Rapid Particle Patterning in Surface Deposited Micro-Droplets of Low Ionic Content via Low-Voltage Electrochemistry and Electrokinetics	Sidelman N, Kolbe A, Cohen M, Zalevsky Z, Herrmann A, Richter S	Sci. Rep.	5	nature com	2015	1309 5	yes	DOI: 10.1038/srep13095

Turning cucurbit[8]uril into a supramolecular nanoreactor for asymmetric catalysis	Zheng L, Sonzini S, Ambarwati M, Scherman OA, Herrmann A	Angew. Chem. Int. Ed	published online	Wiley	2015			DOI: 10.1002/anie.201505628R1
Patterning Two-Dimensional Free-Standing Surfaces with Mesoporous Conducting Polymers	Liu S, Gordiichuk P, Wu Z-S, Liu Z, Wei W, Wu D, Mai Y, Herrmann A, Müllen K, Feng X	Nature Commun.	published online	Nature Publishing Group	2015	Article number: 8817	yes	DOI: 10.1038/ncomms9817
High Density Functionalization of DNA by Electrostatic Interactions	Chen W, Gerasimov JY, Zhao P, Herrmann A	J. Am. Chem. Soc.	published online	Amer. Chemical. Soc.	2015			DOI: 10.1021/jacs.5b05432
Autonomous Replication of Nucleic Acids by Polymerization/Nicking Enzyme/DNAzyme Cascades for the Amplified Detection of DNA and the Aptamer Cocaine Complex	Wang, F.; Freage, L.; Orbach, R.; Willner, I.	Anal. Chem.	85 (17)	Amer. Chemical. Soc.	2013	8196 – 8203	yes	DOI:10.1021/ac4013094
Hemin/G-Quadruplex-Catalyzed Aerobic Oxidation of Thiols to Disulfides: Application of the Process for the Development of Sensors, Aptasensors, and for Probing Acetylcholine Esterase Activity	E. Golub, R. Freeman and I. Willner	Anal. Chem	85	Amer. Chemical. Soc.	2013	1212 6-1213 3		DOI: 10.1021/ac403305k

Switchable Bifunctional Stimuli-Triggered Poly-N-Isopropylacrylamide/DNA Hydrogels	W. Guo, C.-H. Lu, X.-J. Qi, R. Orbach, M. Fadeev, H.-H. Yang and I. Willner	Angew. Chem. Int. Ed	53		2014	1013 4- 1013 8		DOI: 10.1002/anie.201405692
Reversible Ag ⁺ -Crosslinked DNA Hydrogels	W. Guo, X.-J. Qi, R. Orbach, C.-H. Lu, L. Freage, I. Mironi-Harpaz, D. Seliktar, H.-H. Yang and I. Willner	Chem. Commun	50	Royal Soc. Chemistry	2014	4065- 4068	yes	DOI: 10.1039/C3CC49140D
pH-Stimulated DNA Hydrogels Exhibiting Shape-Memory Properties	W. Guo, C.-H. Lu, R. Orbach, F. Wang, X.-J. Qi, A.	Adv. Mater	27	Wiley-VCH	2015	73-78		DOI: 10.1002/adma.201403702
Addressing, Amplifying and Switching DNAzyme Functions by Electrochemically Triggered Release of Metal Ions: Mimicking Cell Functions with Electronics	L. Freage, A. Trifonov, R. Tel-Vered, E. Golub, F. Wang, J.S. McCaskill and I. Willner	Chem. Sci	6	RSC	2015	3544- 3549		DOI: 10.1039/C5SC00744E
Computational Docking Simulations of a DNA-Aptamer for Argininamide and Related Ligands	H.B. Albada, E. Golub and I. Willner	J. Comput. Aided Design	29	Springer	2015	643- 654		DOI 10.1007/s10822-015-9844-5
Programmed DNAzyme-Triggered Dissolution of DNA-Based Hydrogels: Means for Controlled Release of Biocatalysts and for the Activation of Enzyme	S. Lilienthal, Z. Shpilt, F. Wang, R. Orbach and I. Willner	ACS Appl. Mater. Interfaces	7	ACS	2015	8923- 8931		DOI: 10.1021/acsami.5b02156

Cascades								
pH-Responsive and Switchable Triplex-Based DNA Hydrogels	J. Ren, Y. Hu, C.-H. Lu, W. Guo, F. Ricci and I. Willner	Chem. Sci.	6	RSC	2015	4190-4195		DOI: 10.1039/C5SC00594A
Emergence of coding and its specificity as a physico-informatic problem	Wills, PR, Nieselt, K, McCaskill, JS	Orig. Life Evol. Biosph.	45 (1)	Springer	2015	249-255	no	DOI 10.1007/s11084-015-9434-5
On evolvability and robustness in the matrix-GRT	Tangen, U	Genetic Programming and Evolvable Machines	15	Springer Press	2014	343-374	yes	DOI: 10.1007%2Fs10710-014-9221-5
DNA with 3'-5'-Disulfide Links- Rapid Chemical Ligation through Isosteric Replacement	V. Patzke, J. S. McCaskill, G. von Kiedrowski	Angew. Chem. Int. Ed.	53(16)		2014	4222-4226		DOI: 10.1002/anie.201310644
Sequence selection in an autocatalytic binary polymermodel	Tanaka, S, Fellermann, H, Rasmussen, S	ECAL 2013	Conf. Proc.	MIT Press, Cambridge	2013	1083-1084	yes	DOI: 10.7551/978-0-262-31709-2-ch162
Sequence Selection in an Autocatalytic Binary Polymer Model	Tanaka, S, Fellermann, H, Rasmussen, S	Europhys. Letter	107(2), 28004		2014	2, 6		DOI: 10.1209/0295-5075/107/28004
Dynamics of fatty acid vesicles in response to pH stimuli	Ikari, K., Sakuma, Y., Jimbo, T., Kodama, A., Imai, M., Monnard, P-A.	Soft Matter	11	Royal Soc. Chemistry	2015	291-298	yes	DOIs: 10.1039/C5SM01248A

	& Rasmussen, S.							
Dynamics of Chemotactic Droplets in Salt Concentration Gradients	J. Čejková, M. Novák, F. Štěpánek, M. Hanczyc	Langmuir	30	American Chemical Society	2014	1193 7- 1194 4		DOI: 10.1021/la502624f
Remote control of enzymatic reaction in compartmentalized microparticles: a system for the delivery of unstable actives	Ullrich M, Hanuš J, Štěpánek F	Chem. Eng. Sci.	25		2015	191- 199		DOI:10.1016/j.ces.2014.06.020
Artificial swarming: towards radiofrequency control of reversible micro-particle aggregation and deposition	Sarvašová N., Ulbrich P., Tokárová V., Zadražil A., Štěpánek F	Powder Technol.	278	Elsevier	2015	17-25		DOI: 10.1016/j.powtec.2015.01.030
Comparison Between Bulk and FDSOI POM Flash Cell: A Multiscale Simulation Study	Georgiev, VP, Amoroso, SM, Mahmood Ali, T, Vilà-Nadal, L, Busche, C, Cronin, L, Asenov, A	IEEE Transactions on Electronic Devices	vol 62, issue 2	IEEE	2014	680- 684		DOI: 10.1109/TED.2014.2378378
Assembly and core transformation properties of two tetrahedral clusters: [(Fe ₁₃ P ₈ W ₆ O ₂₂₇)-P-III(OH)(15)(H ₂ O)(2)](30-) and [(Fe ₁₃ P ₈ W ₆ O ₂₂₄)-P-III(OH)(12)(PO ₄)(4)](33-)	Molina, P. I.; Miras, H. N.; Long, De-liang; Cronin, L.	Dalton Transactions	43	Royal Soc. Chemistry	2014	5190- 5199	yes	DOI: 10.1039/C3DT53382D

Formation, self-assembly and transformation of a transient selenotungstate building block into clusters, chains and macrocycles	Cameron, J. M.; Gao, J.; Vila-nadal, L.; Long, De-liang; Cronin, L.	Chem. Commun.	50	Royal Soc. Chemistry	2014	2155-2157	yes	DOI: 10.1039/C3CC49293A
Non-equilibrium dynamic control of gold nanoparticle and hyper-branched nanogold assemblies	Sans, V.; Glatzel, S.; Douglas, Fraser J.; Maclaren, D. A.; Lapkin, A.; Cronin, L.	Chem. Sci.	5	Royal Soc. Chemistry	2014	1153-1157	yes	DOI: 10.1039/C3SC53223B
Configurable Nanosized Metal Oxide Oligomers via Precise "Click" Coupling Control of Hybrid Polyoxometalates	A. Macdonell, N. A. B. Johnson, A. J. Surman, L. Cronin	J. Am. Chem. Soc	137 (17),		2015	5662 – 5665		DOI: 10.1021/jacs.5b02466

MICREAgents Period 3 (1/09/2015 - 29/02/2016)								
Phase-Dependent DNA Electrochromics: Controlling the Volatility of the Written Optical State	Liu K, Varghese J, Gerasimov JZ, Polyakov AO, Shuai M, Su J, Chen D, Zajaczkowski W, Marcozzi M, Pisula W, Noheda B, Palstra TTM, Clark NA, Herrmann A	Nature Communication	accepted	Nature Publishing Group	2016		yes	
Supramolecular Micelle-Based Nucleoapzymes for the Catalytic Oxidation of Dopamine to Aminochrome	Albada HB, de Vries JW, Liu Q, Golub E, Klement N, Herrmann A, Willner I	Chemical Communications	52	RSC	2016	5561-5564	no	DOI: 10.1039/C6CC01115B
Turning cucurbit[8]uril into a supramolecular nanoreactor for asymmetric catalysis	Zheng L, Sonzini S, Ambarwati M, Scherman OA, Herrmann A	Angew. Chem. Int. Ed	54	Wiley	2015	13007-13011	yes	DOI: 10.1002/anie.201505628R1
Patterning Two-Dimensional Free-Standing Surfaces with Mesoporous Conducting Polymers	Liu S, Gordiichuk P, Wu Z-S, Liu Z, Wei W, Wu D, Mai Y, Herrmann A, Müllen K, Feng X	Nature Commun.	6	Nature Publishing Group	2015	8817	yes	DOI:10.1038/ncomms9817
High Density Functionalization of DNA by Electrostatic Interactions	Chen W, Gerasimov JY, Zhao P, Herrmann A	J. Am. Chem. Soc.	137	Amer. Chemical. Soc.	2015	12884-12889	no	DOI: 10.1021/jacs.5b05432

An all-inorganic polyoxometalate-polyoxocation chemical garden	L. J. Points, G. J. T. Cooper, A. Dolbecq, P. Mialane, L. Cronin	Chem. Commun	52		2016	1911-1914		DOI: 10.1039/c5cc09536k
Following the Reaction of Heteroanions inside a {W18O56} Polyoxometalate Nanocage by NMR Spectroscopy and Mass Spectrometry	Q. Zheng, L. Vilà-Nadal, C. Busche, J. S. Mathieson, D.-L. Long, L. Cronin	Angew. Chem. Int. Ed	54		2015	7895-7899		DOI: 10.1002/anie.201502295.
High-Performance Polyoxometalate-Based Cathode Materials for Rechargeable Lithium-Ion Batteries	J.-J. Chen, M. D. Symes, S.-C. Fan, M.-S. Zheng, H. N. Miras, Q.-F. Dong, L. Cronin	Adv. Mater	in press					
Application of the Hybridization Chain Reaction on Electrodes for the Amplified and Parallel Electrochemical Analysis of DNA	A. Trifonov, E. Sharon, R. Tel-Vered, J.S. Kahn, I. Willner	J. Phys. Chem. C		ACS	2016			DOI:10.1021/acs.jpcc.5b11308
Integration of Switchable DNA-Based Hydrogels with Surfaces by the Hybridization Chain Reaction	J.S. Kahn, A. Trifonov, A. Ceconello, W. Guo, C. Fan, I. Willner	Nano Lett.		ACS	2015	7773-7778		DOI: 10.1021/acs.nanolett.5b04101

DNA as information	Wills, P. R.	Phil Trans, Math., Physical and Engineering Sciences	374 (2063)	Royal Society A	2016	2015 0417- 2015 0417	no	DOI: 10.1098/rsta.2015.0417
Uniform droplet splitting and detection using Lab-on-Chip flow cytometry on a microfluidic PDMS device	Kunstmann-Olsen, C., Hanczyc, M., Hoyland, J., Rasmussen, S. & Rubahn, H-G	Sensors and Actuators B: Chemical.	229	Elsevier	2016	7-13	yes	http://dx.doi.org/10.1016/j.snb.2016.01.120
Generating minimal living systems from nonliving materials and increasing their evolutionary abilities 2016 I :	Rasmussen, S., Constantinescu, A. & Svaneborg, C.	Philosophical Transactions B. Biological Sciences		Royal Society of London	2016		yes	doi: 10.1098/not yet assigned
Ultra low-power, -area and -frequency CMOS thyristor based oscillator for autonomous microsystems	D. Funke, P. Mayr, T. Maeke, J.S. McCaskill, A. Sharma, L. Straczek, J. Oehm	Analog Integrated Circuits and Signal Processing	accept	Springer	2016		no	