

Books

1. "Experimental Design for Combinatorial and High Throughput Materials Development", J. N. Cawse, Ed., John Wiley and Sons, 2002.

Presentations and Publications

1. "Experimental Design for Combinatorial Experiments", James N. Cawse, in **Informatics for Materials Science and Engineering: Data-driven Discovery for Accelerated Experimentation and Application**, Krishna Rajan, Ed., [Butterworth-Heinemann, Waltham, MA, 2013](#).
2. "Experimental Strategy for High Throughput Materials Development", James N. Cawse, Mater. Res. Soc. Symp. Proc. Vol. 1425, DOI: <http://dx.doi.org/10.1557/opl.2012.272>
3. "Coping With Complexity: Machine Learning; Optimization of Cell-Free Protein Synthesis" Filippo Caschera, Mark A. Bedau, Andrew Buchanan, James Cawse,,Davide de Lucrezia, Gianluca Gazzola, Martin M. Hanczyc, Norman H. Packard, Biotechnology Bioengineering, <http://onlinelibrary.wiley.com/doi/10.1002/bit.23178/full>
4. "Efficient discovery and optimization of complex high-throughput experiments", James N. Cawse, Gianluca Gazzola, Norman Packard, [Catalysis Today 159 \(2011\) 55-63](#).
5. "Automated Discovery of Novel Drug Formulations Using Predictive Iterated High Throughput Experimentation", Filippo Caschera, Gianluca Gazzola, Mark A. Bedau, Carolina Bosch Moreno, Andrew Buchanan, James Cawse, Norman Packard, Martin M. Hanczyc, (2010) PLoS ONE 5(1): e8546. doi:10.1371/journal.pone.0008546
6. "Experimental Strategies for Combinatorial and High Throughput Materials Development", J.N. Cawse, presented at Symyx Symposium 2009, Philadelphia, PA, May 13-14, 2009, and NERM 2009, Hartford, CT, Oct 13, 2009.
7. "Efficient discovery and optimization using high-throughput experimentation in large, complex experimental spaces", James N. Cawse, Fifth Int. Program on Combinatorial and High-Throughput Materials Science, Kloster Seeon, Germany, Sep 28, 2008.
8. Pang Z, Cawse JN, Yu L, Richards WD. Doubly stochastic Poisson distribution of platelet adhesion on material surfaces and its implication on fluorescence image analysis. J Biomed Mater Res A 2008, p225-232.
9. "Experimental Design in High Throughput Systems", in Combinatorial Materials Science, Balaji Narasimhan and Surya K. Mallapragada, Eds., Wiley-Interscience, Hoboken, NJ, 2007.
10. "Development of Combinatorial Chemistry Methods for Coatings: High-Throughput Weathering Evaluation and Scale-Up of Combinatorial Leads", Radislav A. Potyrailo, Karin Ezbiansky, Bret J. Chisholm, William G. Morris, James N. Cawse, Lamyaa Hassib, George Medford, and Hariklia Reitz, Journal of Combinatorial Chemistry, 7(2), 2005, p 190-196.

11. "Combinatorial chemistry methods for coating development VI: correlation of high-throughput screening methods with conventional measurement techniques", Bret Ja Chisholm, Radislav A. Potyrailo James N. Cawse., *Progress in Organic Coatings*, 48(2-4), 2003, p 219-226.
12. "Efficient Discovery of Nonlinear Dependencies in a Combinatorial Catalyst Data Set", James N. Cawse, Manfred Baerns, and Martin Holena, *J. Chem. Inf. Comput. Sci.*, **44** (1), 143 -146, 2004
13. "Combinatorial Chemistry Methods For Coating Development: The Importance Of Understanding Process Capability", Bret Ja Chisholm, Radislav Alexandrovich Potyrailo, James Norman Cawse, Ronald Eugene Shaffer, Michael Brennan, Chris Anthony Molaison, *Progress in Organic Coatings* 47(2), 2003, p120-127.
14. Combinatorial chemistry methods for coating development V: generating a combinatorial array of uniform coatings samples, James N. Cawse, Daniel Olson, Bret J. Chisholm, Michael Brennan, Ted Sun, William Flanagan, Jay Akhave, Ali Mehrabi and Dennis Saunders, *Progress in Organic Coatings*, Volume 47, Issue 2, August 2003, Pages 128-135.
15. "Combinatorial Chemistry Methods For Coating Development III: Development Of A High Throughput Screening Method For Abrasion Resistance. Correlation With Conventional Methods And The Effects Of Abrasion Mechanism" Bret Chisholm, Radislav Potyrailo, Ron Shaffer, James Cawse, Michael Brennan, and Chris Molaison, *Progress in Organic Coatings*, 47(2), 2003, p112-119.
16. "Combinatorial Discovery of Metal Co-Catalysts for the Carbonylation of Phenol", James L. Spivack, James N. Cawse*, Donald W. Whisenhunt Jr., Bruce F. Johnson, Kirill V. Shalyaev, Jonathan Male, Eric J. Pressman, John Ofori, Grigorii Soloveichik, Ben P. Patel, Timothy L. Chuck, David J. Smith, Tracey M. Jordan, Michael R. Brennan, Richard J. Kilmer, Eric D. Williams, *Applied Catalysis A*, 2003, 254(1), p 5-26.
17. "Development of Combinatorial Chemistry Methods for Coatings: High-Throughput Adhesion Evaluation and Scale-up of Combinatorial Leads", Radislav A. Potyrailo, Bret J. Chisholm, William G. Morris, James N. Cawse, William P. Flanagan, Lamyaa Hassib, Chris A. Molaison, Karin Ezbiansky, George Medford, and Hariklia Reitz, *Journal of Combinatorial Chemistry*, 2003, 5(4) 472 - 478.
18. "Informatics Strategies for Combinatorial and High Throughput Materials Development", J.N. Cawse, presented at AccelrysWorld, San Diego CA, Feb 24-26 2003.
19. "Combinatorial Methods for Coatings Development", J. N. Cawse and J. Akhave, *Combi 2003* (Knowledge Foundation), San Jose, CA, Feb 20-21, 2003.
20. "The development of combinatorial chemistry methods for coating development. I. Overview of the experimental factory", B. Chisholm; R. A. Potyrailo; J. N. Cawse; R. Shaffer; M. Brennan; C. Molaison; D. Whisenhunt; W. Flanagan; D. Olson; J. Akhave; D. Saunders; A. Mehrabi; M. Licon, *Progress in Organic Coatings*, 45(2002), 313-321.
21. Screening using High Dimensional Gradient Arrays", J. N. Cawse and R. J. Wroczynski, presented at 224th ACS National Meeting, Boston MA, Aug 18-21 2002.
22. "A Systematic Approach to Planning for a Designed Combinatorial Experiment", J. N. Cawse, presented at Combi 2002 (Knowledge Foundation), San Jose, CA , Jan 23-25 2002.

23. "Statistical Issues of High Throughput Materials Development", G. Hahn, J.N. Cawse, and T. Repoff, presented at Gordon Conference on Statistics in Chemistry and Chemical Engineering, Williams, MA, July 22-27, 2001
24. "Experimental Strategies for Combinatorial and High-Throughput Materials Development", J. N. Cawse, *Accounts of Chemical Research*, **34 (2001)**
25. "Design for Six Sigma in High Throughput Screening and Combinatorial Chemistry", J. N. Cawse, presented at AIChE National Meeting, Los Angeles, CA, Nov 13-16, 2000.
26. "Applying Design for Six Sigma to Combinatorial Discovery and Process Optimization", J.N. Cawse, presented at Combinatorial Materials Science: A National Dialog, NIST, Gaithersburg, MD, May 31-June 1, 2000.
27. "Strategies for Sampling Combinatorial Space", Workshop on Experimental Strategy for Combinatorial Materials Discovery, J.N. Cawse, Workshop Chair, Combi 2000 (Knowledge Foundation), San Jose, CA , Jan 23-25 1999.
28. "Experimental Strategy for Combinatorial Materials Development", J.N. Cawse, presented at NIST Adv. Tech. Program Workshop on Combinatorial Methods for Advanced Materials", San Jose, CA, Nov 16 1999.
29. "Design of Experiments: What Would Excite Cuthbert Today! G. Hahn, J.N. Cawse, N. Doganaksoy, A. Neff, presented at Joint Statistical Meetings 1999, Baltimore MD, Aug 8-12 1999.
30. "Combinatorial Search and Experimental Design Techniques", J.N. Cawse, N. Doganaksoy, C. Hansen, R. Mattheyses, C. Pisupati, T. Repoff, C. Stanard, and W. Tucker, presented at ASA Quality & Productivity Research Conference, Schenectady, NY, May 19-20 1998
31. "Application of Combinatorial Chemistry to Industrial Material Problems", J.N. Cawse, presented at NIST Advanced Technology Program Workshop on Combinatorial Methods, Atlanta, GA, Nov 17-18, 1998.
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34. "A DOE Fact Finding Mission", J.N.Cawse and N. Izadi, *PI Quality*, January/February 1994, p 54.
35. "Salvage That Experiment", J. N. Cawse and N. Izadi, *Today's Chemist at Work*, V1 No. 2, June 1992, p24; "Using DOE Techniques to Salvage Badly Designed Experiments", J.N.Cawse and N.Izadi, *BBN Software Users Group Meeting*, October 1991.

36. "Catalyst Evaluation in a Continuous Microreactor: Use of RS/1 for Data Reduction and Analysis", J.N. Cawse, presented at *BBN Software Users Group Meeting*, October 1986.
37. "Catalyst Screening Using a Berty Reactor in Batch Mode", J. N. Cawse and E. J. Pressman, presented at *Recycle Reactors and CSTR's in Reaction Engineering Conference*, June 1985.
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39. "1,4 Butanediol via Rhodium Carbonyl-Catalyzed Hydroformylation of Allyl Alcohol and Allyl t-Butyl Ether", W.E.Smith, G.R.Chambers, R.C. Lindberg, J.N.Cawse, A.J.Dennis, B.E.Harrison, and D.R.Bryant, *Tenth Organic Reactions - Catalysis Society Conference*, May 1984; printed in "Catalysis of Organic Reactions (10th ORCS Conference)", R.L.Augustine, Ed., p151-170(1985), Marcel Dekker, Inc., (New York).
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44. "Oxidative-Addition Reactions of the Na₂Fe(CO)₄ Supernucleophile", J.P. Collman, J.N.Cawse, R.G.Finke, and J.I. Brauman, *J. Am. Chem. Soc.*, 99, 2515, (1977).
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