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ISSN: 2278-1862

Journal of Applicable Chemistry

2018, 7 (6): 1843-1848

(International Peer Reviewed Journal)

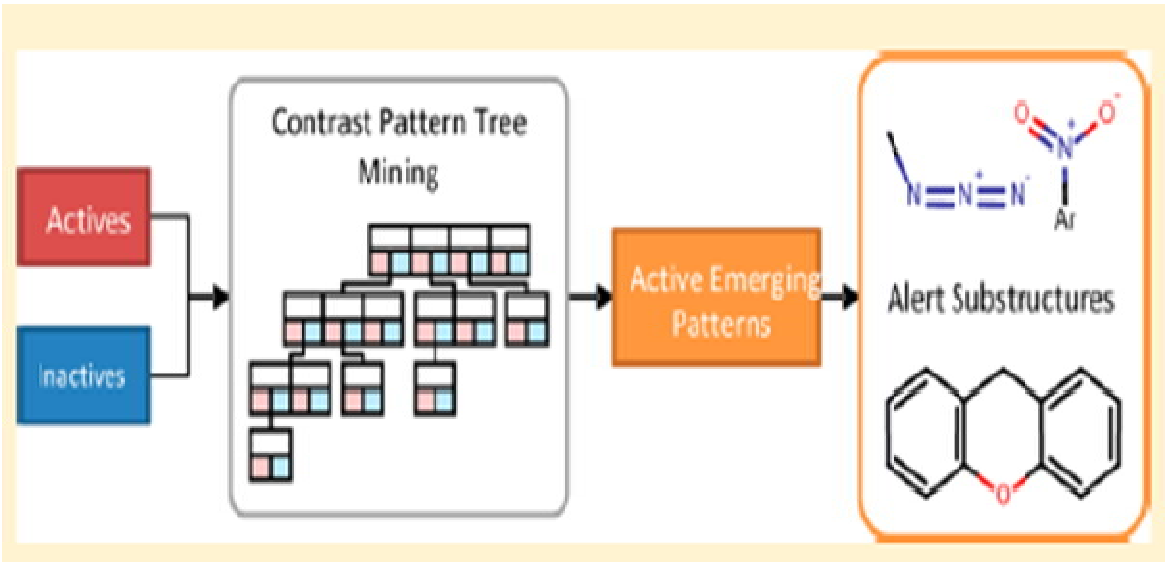
Knowledge Inn (in nature)

- *Toxicological Knowledge Discovery*
- *Knowledge Extraction in Chemical kinetics*
- *Research Profile of Stephen Grossberg, Boston*

KLab

rsr.chem1979

Toxicological Knowledge Discovery



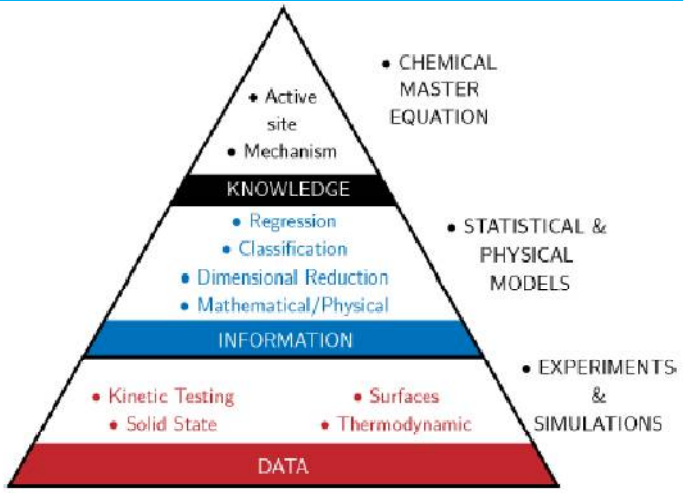
Information Source (is) ACS.org ;

Richard Sherhod et al, J. Chem. Inf. Model. 2014, 54, 1864−1879

Emerging pattern mining to aid toxicological knowledge discovery;

doi.org/10.1021/ci5001828 |

Knowledge Extraction in Chemical kinetics



Schematic of data−information−knowledge hierarchy

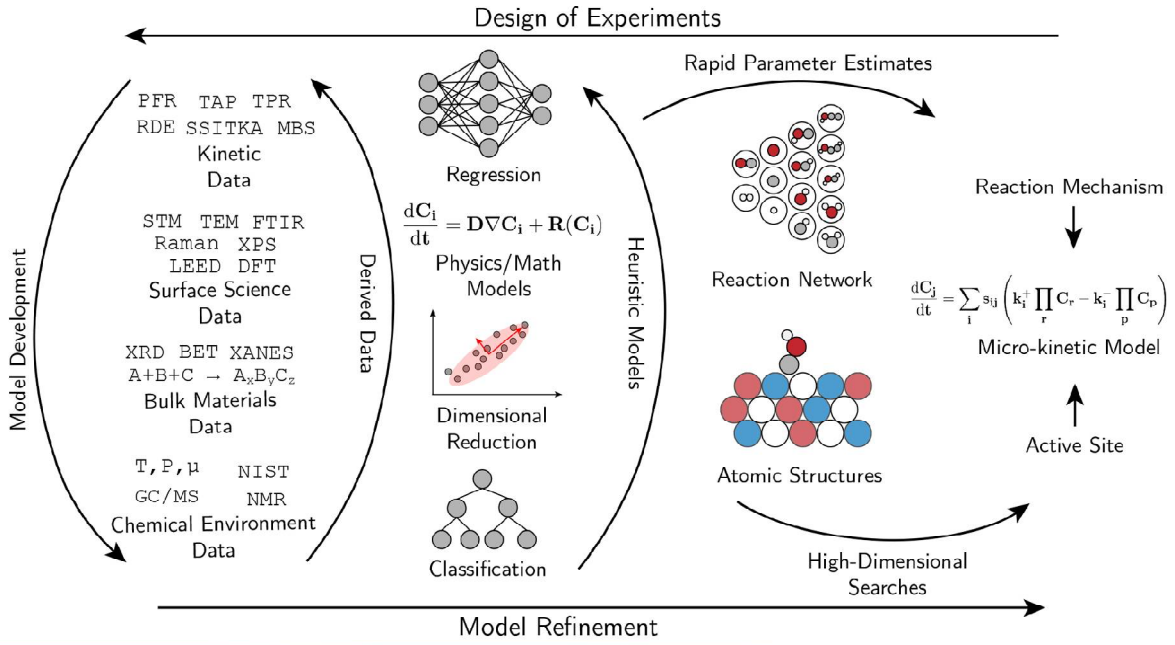
Information Source (is) : ACS.org ;

TI: Extracting Knowledge from Data through Catalysis Informatics

AU: Andrew J. Medford, M. Ross Kunz, Sarah M. Ewing, Tammie Borders, Rebecca Fushimi

JO: ACS Catal. 2018, 8, 7403−7429

DOI: 10.1021/acscatal.8b01708



Schematic relationship between in heterogeneous catalysis

📖 (data → Inference/information → knowledge/Intelligence (Diki)

- Data driven/ model driven Models (empirical, theoretical, computational, simulation based on statistics and/or physics)
- Creation of derived data, → establish heuristic relationships between data, rapid estimation of parameters for reaction network or atomic-scale surface models
- High-dimensional structures based on reaction network/atomic-scale structure → distilled → reaction mechanism(s) and active site(s)

→ → →

[Design of experiments; refinement of micro-kinetic models based on chemical master equation]

Research Profile

Stephen Grossberg

Professor, Boston University, US

(Google) Citations: 72, 913
h-index: 124
 # Publications (1967-2019) : 570 approximately

(web accessed on 16-11-18)

Graduation	**Stanford University, Dartmouth College**
	Introduced neural models of brain in 1957
Ph.D	**Mathematics**

Born on 31 December 1939
New York City

Profession
Expert cognitive scientist
theoretical & computational psychologist
neuroscientist
mathematician
biomedical engineer
neuromorphic technologist
leader of biological/artificial NN research

Publications with more 2500 citations	Citations	Year of pub
A massively parallel architecture for a self-organizing neural pattern recognition machine GA Carpenter, S Grossberg Computer vision, graphics, and image processing 37 (1), 54-115	3559	1987
Absolute stability of global pattern formation and parallel memory storage by	2663	1983

competitive neural networks
MA Cohen, S Grossberg
IEEE transactions on systems, man, and cybernetics, 815-826

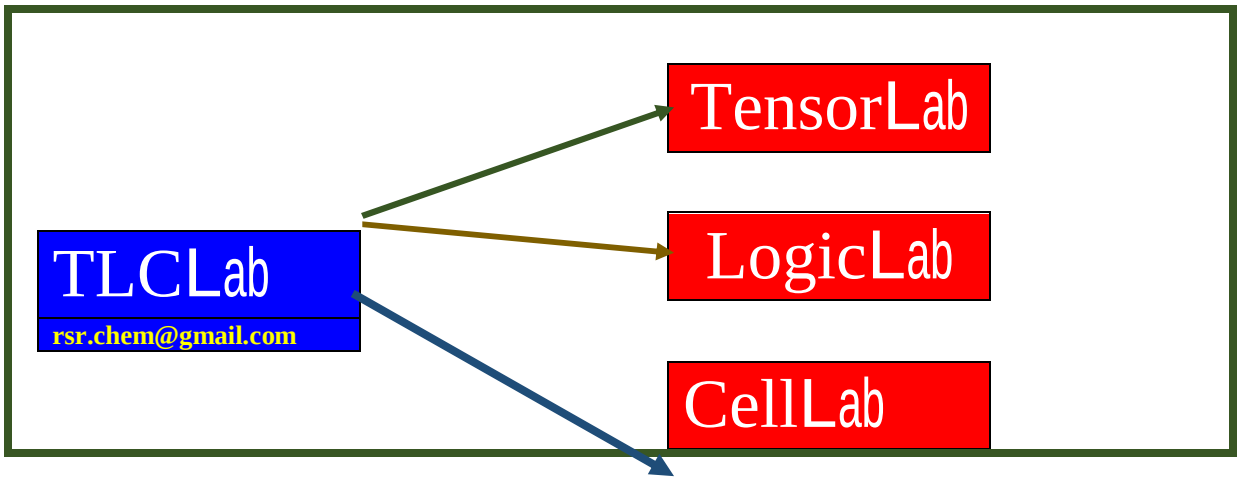
ART 2: Self-organization of stable category recognition codes for analog input patterns — 2543 — 1987
GA Carpenter, S Grossberg
Applied optics 26 (23), 4919-4930

Fuzzy ARTMAP: A neural network architecture for incremental supervised learning of analog multidimensional maps — 2511 — 1992
GA Carpenter, S Grossberg, N Markuzon, JH Reynolds, DB Rosen
IEEE Transactions on neural networks 3 (5), 698-713

Education (of S Grossberg)			
1957	High school	Stuyvesant High School, Manhattan	First in Class of 1957
	Freshman introductory psychology course	Dartmouth College	
		Undergraduate research	
1957to1958	Derived his first neural models from a real-time analysis of behavioral learning data	Dartmouth	🕮 Albert Hastorf chairman of psychology 🕮 NSF Undergraduate Research Fellow
1961-1964	B.A.	Dartmouth .	🕮 First joint major in mathematics and psychology 🕮 First in Class of 1961 🕮 NSF Graduate Fellowship 🕮 Woodrow Wilson Graduate Fellowship
Graduate course			
1964-1967	MS in mathematics	With 90 credits graduate mathematics	Stanford
Doctoral research			
1964-	First year of Ph. D	Grossberg wrote a 440-page student monograph 'The Theory of Embedding Fields with Applications to Psychology and Neurophysiology' This was a summary his discoveries over the one decade (1957-1967). The monograph was distributed by Rockefeller to 125 of the leading labs in psychology and neuroscience at that time Rockefeller University Graduate Fellowship	
1967	Ph. D in Mathematics	Rockefeller 🕮 Thesis advisor: Gian-Carlo Rota First global content addressable memory theorems about the neural learning models that he had discovered at Dartmouth Rockefeller	

		Institute for Medical Research (now The Rockefeller University) in Manhattan	
Employment (S Grossberg)			
1967-1969	Assistant professor	Applied mathematics	MIT
1969-1975	Associate professor	Tenure was not granted	MIT
1975-	Full professor	Mathematics, Psychology, and Biomedical Engineering	Boston University

year	Awards (to S Grossberg)	
1991	First IEEE Neural Network Pioneer Award, ,	
1992	INNS Leadership Award	
1992	Boston Computer Society Thinking Technology Award,	
2000	Information Science Award of Association for Intelligent Machinery,	
2002	Charles River Laboratories prize of Society for Behavioral Toxicology,	
2003	INNS Helmholtz Award	
2015	Norman Anderson Lifetime Achievement Award of Society of Experimental Psychologists "".	Pioneering theoretical research on how brains give rise to minds Foundational contributions to computational neuroscience and connectionist cognitive science
2017	Institute of Electrical and Electronic Engineers (IEEE) Frank Rosenblatt Award	For contributions to understanding brain cognition and behavior
1987-2010	Founder and Editor-in-Chief	Journal Neural Networks,



Knowledge	Know logic evolution (to) discover g(enes) evolution (of Universe)	
	Pronounced as Na led ge	Nature algorithm (or Natrum : sodium) logic evolution discovery (Light emitting diode) gorgeous end (good end) (good/gorgeous/ genetic evolution)

X_AI Future …!

<Artificial Intelligence (AI)>

Computational Intelligence

Machine learning; Machine Intelligence;

Robotic Intelligence

Artificial Brain (rat. ….) →

Humanoid Robotic Intelligence