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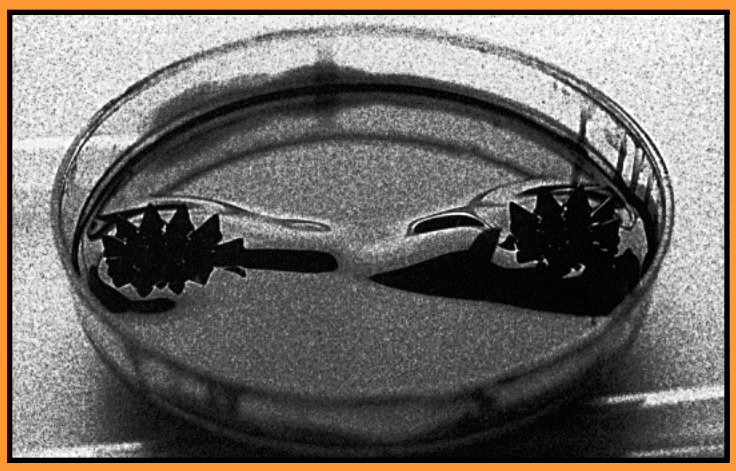
Teaching General Chemistry

A Materials Science Companion



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Topic Matrix

Topic	*Chapter*										*Experiment*
Atoms	1	2									1
Acids and Bases								8			15
Bands							7	8			7, 8
Batteries		2	3					8			
Bohr model for hydrogen atom								8			
Bonding			3		5	6	7				2
Conductivity, thermal and electrical							7				8, 11, 12
Coordination numbers/geometry					5						2
Crystal structure		2	3		5		7		9		2, 4, 5
Defects						6		8	9		6
Diffusion										10	13
Dipoles		2									
Electrochemistry								8			
Electromagnetic radiation				4		6	7	8			4,9
Electronegativity							7				7
Electrons		2					7	8			7,8
Entropy								8	9		
Equilibrium								8	9		
Free energy								8	9		
Heat capacity		2									1
Intermolecular forces		2									2
Ionic solids					5						2
Ionization								8			
Kinetics						6				10	
Lasers				4				8			4,9
Le Chatelier's principle									9		10
Magnetism		2							9		11, 14
Metals			3		5	6	7				2,10
Molecular orbital theory							7				
Nuclear chemistry						6					6
pH								8			15
Periodic properties			3			6	7				7
Phase changes						6			9		10, 11, 12
Quantum mechanics						6		8			
Redox		2							9	10	8,11
Semiconductors			3		5		7	8			2, 7, 9
Smart materials	1	2							9		10
Solid solutions			3			6	7		9	10	3, 7, 14
Spectroscopy - Beer's Law							7	8			7, 9
Stoichiometry			3		5				9	10	2, 11
Structures of solids			3		5	6	7		9		2, 5, 10
Superconductivity	1								9		11
Thermochemistry		2							9		
Thermodynamics						6			9	10	
Transition metals		2								10	3,10,11,12
VSEPR				4	5						2
X-ray diffraction				4							4, 5

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Products

"Optical Transform Kit," ICE, 1991, 1993.

"ICE Solid-State Model Kit," ICE, 1992, 1994.

"Teaching General Chemistry: A Materials Science Companion," ACS Books, 1993.

"Teaching Chemistry: A Materials Science Anthology," ACS Satellite Seminar, 1994.

"Solid State Resources," JCE: Software, 1995.

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