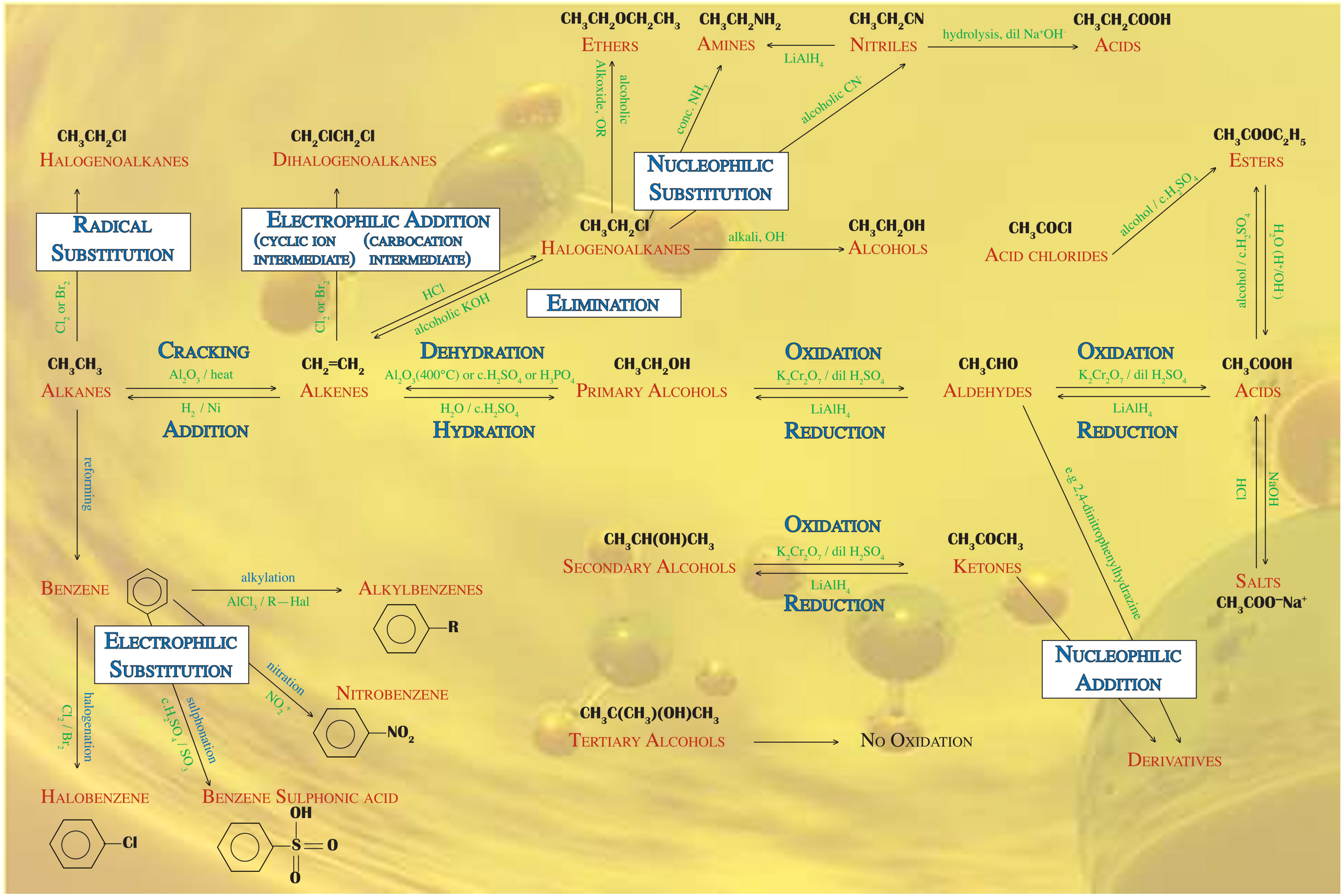
CH3CH2OCH2CH3
Ethers
CH3CH2NH2
Amines
CH3CH2CN
Nitriles
hydrolysis, dil Na+OH-
CH3CH2COOH
Acids
LiAlH4
Alkoxide, -OR
alcoholic
conc. NH3
alcoholic CN-
CH3CH2Cl
Halogenoalkanes
Nucleophilic Substitution
alkali, OH-
CH3CH2OH
Alcohols
CH3CH2Cl
Halogenoalkanes
CH2ClCH2Cl
Dihalogenoalkanes
Radical Substitution
Electrophilic Addition
(cyclic ion intermediate)
(carbocation intermediate)
Cl2 or Br2
Cl2 or Br2
HCl
alcoholic KOH
Elimination
CH3COCl
Acid chlorides
alcohol / c.H2SO4
CH3COOC2H5
Esters
alcohol / c.H2SO4
H2O (H+/OH-)
CH3CH3
Alkanes
Cracking
Al2O3 / heat
H2 / Ni
Addition
CH2=CH2
Alkenes
Dehydration
Al2O3(400°C) or c.H2SO4 or H3PO4
H2O / c.H2SO4
Hydration
CH3CH2OH
Primary Alcohols
Oxidation
K2Cr2O7 / dil H2SO4
LiAlH4
Reduction
CH3CHO
Aldehydes
Oxidation
K2Cr2O7 / dil H2SO4
LiAlH4
Reduction
CH3COOH
Acids
reforming
HCl
NaOH
Salts
CH3COO−Na+
e.g 2,4-dinitrophenylhydrazine
Nucleophilic Addition
Derivatives
Benzene
alkylation
AlCl3 / R—Hal
Alkylbenzenes
R
Electrophilic Substitution
nitration
NO2+
Nitrobenzene
NO2
halogenation
Cl2 / Br2
c.H2SO4 / SO3
sulphonation
Halobenzene
Cl
Benzene Sulphonic acid
OH
S
O
O
CH3CH(OH)CH3
Secondary Alcohols
Oxidation
K2Cr2O7 / dil H2SO4
LiAlH4
Reduction
CH3COCH3
Ketones
CH3C(CH3)(OH)CH3
Tertiary Alcohols
No Oxidation