

Chem Help ASAP – master list of organic chemistry playlists

Updated on 04 May 2020

ORGANIC I PLAYLISTS

organic – general chemistry review

https://www.youtube.com/playlist?list=PLIzSRqjN72jdiM2f6Pb5sgaqIYHip_vNx

Valence electrons, effective nuclear charge, periodic table trends, electronegativity, octet rule, formal charges

organic – hybridization

https://www.youtube.com/playlist?list=PLIzSRqjN72jfPWtbRF7X_kegZ6YcV-rNG

Hybrid orbitals, bond angles & atomic geometry, examples of different hybridizations, drawing hybrid atoms, flaws in the hybridization model

organic – structure

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfDXnZqaozTjb3KKjpBCUp9>

Lewis dot structure, structural & constitutional isomers, condensed structural formulas, line-angle structures, converting different types of structures

organic – bonding

<https://www.youtube.com/playlist?list=PLIzSRqjN72jc96yYR3XLAlydiuHPFcmQh>

orbital energy diagrams, bond formation, sigma bonds, pi bonds, orbital pictures of simple molecules

organic – functional groups

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcxlw6iT2yGs1Uv8wpCqOgA>

hydrocarbons, R-groups, alkyl groups, benzene rings, alcohols, amines, carbonyls, acid derivatives

organic – introductory nomenclature

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfOk-zrcAOeclYQoFZHuer>

naming rules, alkanes, alkyl groups, haloalkanes, alkenes, alkynes, cycloalkanes

organic – intermediate nomenclature

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcnlVr1C0tyWqipE4pG7TE6>

naming ethers and alkoxy groups, branched alkyl groups, aldehydes and ketones, and acid derivatives

organic – acid-base reactions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfpR4AbALbsRCCUzPzrBkeu>

pKa values, pKa tables, factors that affect acidity, reaction mechanism

organic – charge stabilization

<https://www.youtube.com/playlist?list=PLIzSRqjN72jd9-qRqJeuGgJia2eEouzR>

atomic size, electronegativity, resonance, examples of resonance, inductive effect, hybridization, hyperconjugation

organic – conformational analysis

<https://www.youtube.com/playlist?list=PLIzSRqjN72jf5Pt1C6IDhKpp0BdPgZ6kA>

molecular flexibility, Newman projects of alkanes, chair conformations of cyclohexanes, chair flipping, barriers to alkene rotation

organic – introductory stereochemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jenPFu4jNTHgdWSYNsXS50m>

chirality, Cahn-Ingold-Prelog rules, drawing and naming stereocenters, enantiomers, diastereomers, meso compounds, alkene configuration

organic – intermediate stereochemistry

https://www.youtube.com/playlist?list=PLIzSRqjN72jdzbz7AdJyxQ4tg8R_BhCf9

phantom atoms, naming molecules with multiple stereocenters

organic – reaction energy

https://www.youtube.com/playlist?list=PLIzSRqjN72jdzbz7AdJyxQ4tg8R_BhCf9

bonding energy, conformational energy, reaction coordinate diagrams, transition states, intermediates of carbon, stability trends in carbanions and carbocations

organic – reaction types

https://www.youtube.com/playlist?list=PLIzSRqjN72jdzbz7AdJyxQ4tg8R_BhCf9

substitutions, eliminations, additions

organic – substitutions and eliminations of alkyl halides

https://www.youtube.com/playlist?list=PLIzSRqjN72jdzbz7AdJyxQ4tg8R_BhCf9

types of halides, SN2, SN2 inversion, E2, E2 regioselectivity, E2 bases, discerning between SN2 and E2, SN1, SN1 solvolysis, SN1 stereochemistry, hydride shifts, E1, discerning SN1 and E1

organic – substitutions and eliminations of alcohols

https://www.youtube.com/playlist?list=PLIzSRqjN72jfODgSubs9_6dv7w7jGJN9g

alcohols as leaving groups, substitutions with HX, tosylates and mesylates, alcohol solvolysis, alcohol eliminations

organic – sample substitution and elimination problems

<https://www.youtube.com/playlist?list=PLIzSRqjN72jeINSkT7uxaYbMP-RTF8yr6>

reaction triangles, SN2 problems, E2 problems, SN1 problems, E1 problems

organic – alkene additions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfWHeM3Winjby5FICA6L6k8>

addition of H-X, carbocation rearrangements, hydration, hydrogenation, dehalogenation, halohydrins, epoxidation, epoxide opening

organic – sample addition reaction problems

https://www.youtube.com/playlist?list=PLIzSRqjN72jcc3P_x87dpXHUZ_19TSOHU

cyclic alkene additions, terminal alkene hydration, anti additions, halonium ion chemistry

organic – introductory nuclear magnetic resonance spectroscopy

https://www.youtube.com/playlist?list=PLIzSRqjN72jfdP6_XzJ6IRS2yXsGNk_hZ

NMR terminology, chemical shift, peak multiplicity, peak integration, using NMR to distinguish between multiple problems

organic – aromaticity and resonance

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcRgDFxxnlhrSyDG21CMRd3>

aromatic stability, Huckel's rules, aromatic or aliphatic, aromatic ions

organic – electrophilic aromatic substitution

<https://www.youtube.com/playlist?list=PLIzSRqjN72je5Ea93tbTqUEXrtJ8IP6Nc>

EAS mechanism, halogenation, nitration, aniline synthesis, Friedel-Crafts alkylation, Friedel-Crafts acylation, Clemmensen reduction, Wolff-Kischner reduction

organic – formation and reaction of alkoxides

<https://www.youtube.com/playlist?list=PLIzSRqjN72jeONcG7DzFiz6rSfZ6q2GWq>

alcohol deprotonation, solvents for alkoxides, Williamson ether synthesis, E2 reactions with alkoxide bases

organic – alkyne chemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jeONcG7DzFiz6rSfZ6q2GWq>

differences between alkenes and alkynes, reduction of alkynes, deprotonation to make acetylides, acetylide alkylations

organic – organometallic reagents

<https://www.youtube.com/playlist?list=PLIzSRqjN72jesMGwCYI2HcjfVOoTjEQk5>

synthesis of organometallics, Grignard reagents, organolithium reagents, other types of organometallics

organic – introductory carbonyl chemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfCSPEqLFtJbQRgB0h9ZW1r>

carbonyl oxidation states, alcohol oxidations and beta-hydrogens, nucleophilic additions to carbonyls, enolate formation

organic – nucleophilic additions on carbonyls

https://www.youtube.com/playlist?list=PLIzSRqjN72jezKxF6ubBeApS8_ClcefsK

hydride reagents, organometallic additions, hydride additions

organic – enolate chemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfH8g0XKgZmAavc04RUSp4w>

bases for making enolates, LDA as a base, enolate alkylation, kinetic and thermodynamic enolates, aldol reaction, aldol condensation, unsaturated ketones

organic – acid derivatives

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfH8g0XKgZmAavc04RUSp4w>

types of acid derivatives, acid derivative interconversion, synthesis of carboxylic acids, acid chlorides, esters, amides, nitrile synthesis, acid derivative hydrolysis, reaction mechanism

organic – nucleophilic additions on acid derivatives

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcgUNCjHqJ03AIQSTGbbIj7>

additions to carboxylic acids, ester, amide, and nitrile additions, reactions of CO₂, example problems

ORGANIC II PLAYLISTS

organic – advanced alkyl halide reactions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcv5gg-aDhkyI6OkQ64qyVi>

nucleophile polarizability, S_N2 inversion, phenacyl effect, anti elimination, alkyl shifts

organic – reaction kinetics

https://www.youtube.com/playlist?list=PLIzSRqjN72jfFcdw5zR3HQP-Ztpf_-Blb

rate equations, reaction order, reaction mechanism

organic – radical reactions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jefUvnwlivec6EygG5xKJhS>

homolytic bond cleavage, radical stability, initiation, propagation, termination, radical halogenation

organic – ether chemistry

https://www.youtube.com/playlist?list=PLIzSRqjN72jfwSzYC5wpvbGfNZ_v6JTU6

ether synthesis, ether cleavage, benzyl ethers, THP ethers, protecting groups

organic – advanced alkene additions

https://www.youtube.com/playlist?list=PLIzSRqjN72jer1iWxARwtT5jMKh_uKVbq

hydroboration-oxidation, alkyne hydration, keto-enol tautomerization, dihydroxylation, oxidative cleavage, radical addition of H-X

organic – EAS regioselectivity

<https://www.youtube.com/playlist?list=PLIzSRqjN72jcxn8ybXY-FDu-3pRXMNKuM>

ortho, meta, and para positions, resonance, electron-donating groups, electron-withdrawing groups, halogens as directing groups

organic – diazonium ion chemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jeL89eOnsefZAhNAnyxhd53>

anilines, diazonium ions, reactions of diazonium ions, azo dyes

organic – nucleophilic aromatic substitutions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jdgIK3BzitqiOFLISW81gB>

SNAr mechanism, types of substitutions, SNAr scope, types of aromatic rings, carbonyl analogy

organic – cycloaddition chemistry

<https://www.youtube.com/playlist?list=PLIzSRqjN72jeESVuiorb24ZoZ2-DiJWXY>

Diels-Alder cycloaddition, regioselectivity, diene and dienophile stereochemistry, end effect, 1,3-dipolar cycloadditions

organic – cross-coupling reactions

<https://www.youtube.com/playlist?list=PLIzSRqjN72jfs7npU9hC5wxaKXp5xtkEW>

palladium catalytic cycle, Negishi coupling, Stille coupling, Suzuki coupling, Sonogashira coupling, Buchwald-Hartwig coupling

organic – acetals, ketals, and enols

https://www.youtube.com/playlist?list=PLlzSRqjN72jfXzNBvBU_KGxjEtDF76gBn

acetals, ketals, acetal mechanism, protecting groups, tautomers, ketone halogenation

organic – acid derivative enolates

<https://www.youtube.com/playlist?list=PLlzSRqjN72jd8GexPAoOti13mUgc8q3-i>

ester enolates, Claisen condensation, transesterification, acetoacetic ester synthesis, Dieckmann condensation, amide enolates, nitrile enolates

organic – amines, imines, and enamines

<https://www.youtube.com/playlist?list=PLlzSRqjN72jemDfOqxqBE1MN-YRFmyEOD>

types of amines, amine synthesis, imine formation mechanism, reductive amination, enamine formation mechanism, Stork enamine alkylation, enamine acylation, amide reduction

organic – Wittig reaction

https://www.youtube.com/playlist?list=PLlzSRqjN72jfmW0dXSXATnPlhvr_jMpVy

organophosphorous functional groups, phosphine nucleophilicity, Wittig reaction, Horner-Wadsworth-Emmons reaction

organic – Michael addition

<https://www.youtube.com/playlist?list=PLlzSRqjN72jfAQNr35cheOkaZQ33G3jBC>

Michael addition, Michael acceptors, Michael donors, Robinson annulation

organic – polymer chemistry

<https://www.youtube.com/playlist?list=PLlzSRqjN72jcEkmhta2p3jlylgKfoIY5>

addition polymers, cationic, anionic, and radical polymerization, condensation polymers, polyesters, polyamides, polycarbonates, resin identification codes

organic – molecular orbital theory and modeling

<https://www.youtube.com/playlist?list=PLlzSRqjN72jeIHlwnM9-NHI5izRLLSqZp>

MO theory, hybridization, output files, frontier molecular orbitals, Huckel theory

REACTIONS IN THE LITERATURE – 28 total (160 + 36 + 73 = 269 videos)

organic – reactions as found in the chemical literature

https://www.youtube.com/playlist?list=PLzSRqjN72jfFd-JON4J1_tchx5ifEMwp

various reactions from organic 1 and 2