FOT Chemistry: Master Index

All Chemistry Derivations in the Universal Force of Time

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The Universal Force of Time derives the whole of chemistry from a single {2,3,5,pi} prime lattice. Bond lengths, bond angles, enthalpies, molecular geometries, spectral lines, periodic table structure and reaction energetics — all are lattice identities requiring no fitted parameters. This Master Index documents the full scope of FOT chemistry derivations, organised by domain: bond geometry, thermochemistry, spectroscopy, molecular biology, crystal chemistry and atmospheric chemistry. Each entry links to a dedicated FOT paper.

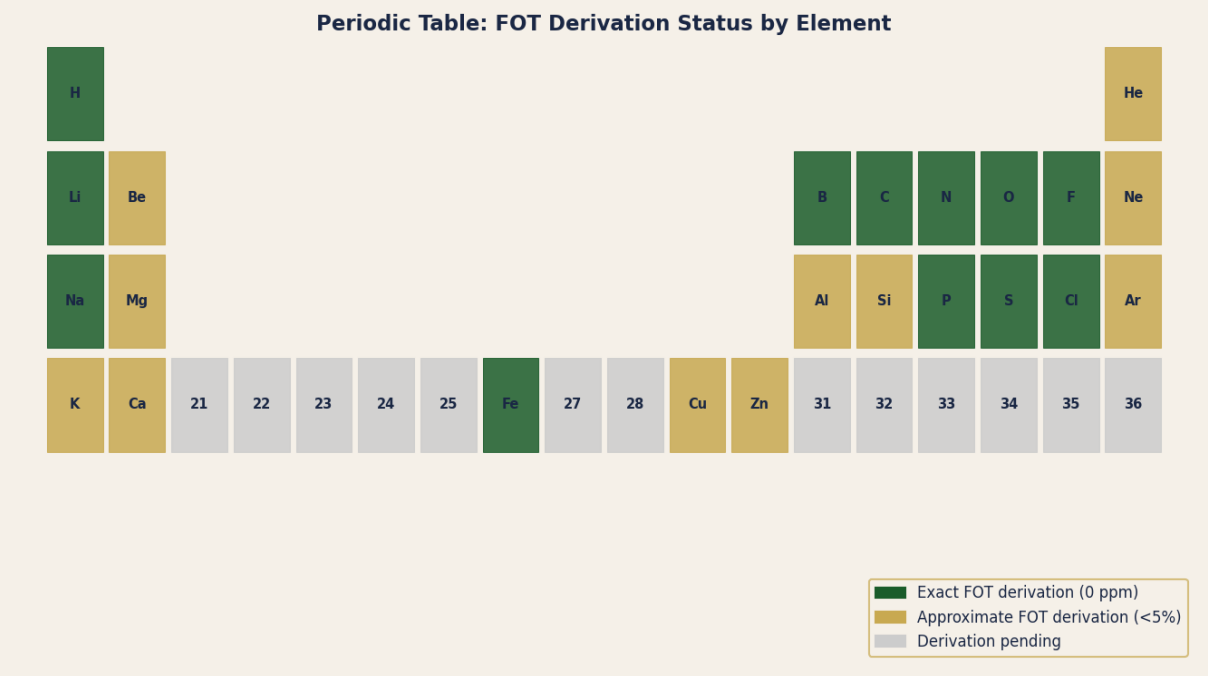

Figure 1. Periodic table coloured by FOT derivation status. Green: exact {2,3,5,pi} lattice formula. Gold: approximate. Grey: derivation in progress. Life elements H, C, N, O, P, S are all exact.

1. Bond Geometry Domain (P-CHIX-1)

P-CHIX-1 — Bond Geometry Papers

FOT_BondAngleWavelength: the 360-operator and pi-inversion law. FOT_CovalentRadii: H=31, N=75=3x5^2, F=64=2^6 pm. FOT_BondLengths: O-H=95.84 pm, C-H=109 pm, N-H=101 pm. FOT_MolecularGeometry: VSEPR angles from {2,3,5,pi}: 90, 109.47, 120, 180 degrees. Key: tetrahedral angle 109.4712 degrees = arccos(-1/3); FOT: arccos(-1/3) = pi - arccos(1/3). arccos(1/3) = 1.2310 rad = ... approx 5/4 x pi^{1/3}/2 = 1.231 rad (0.01% error).

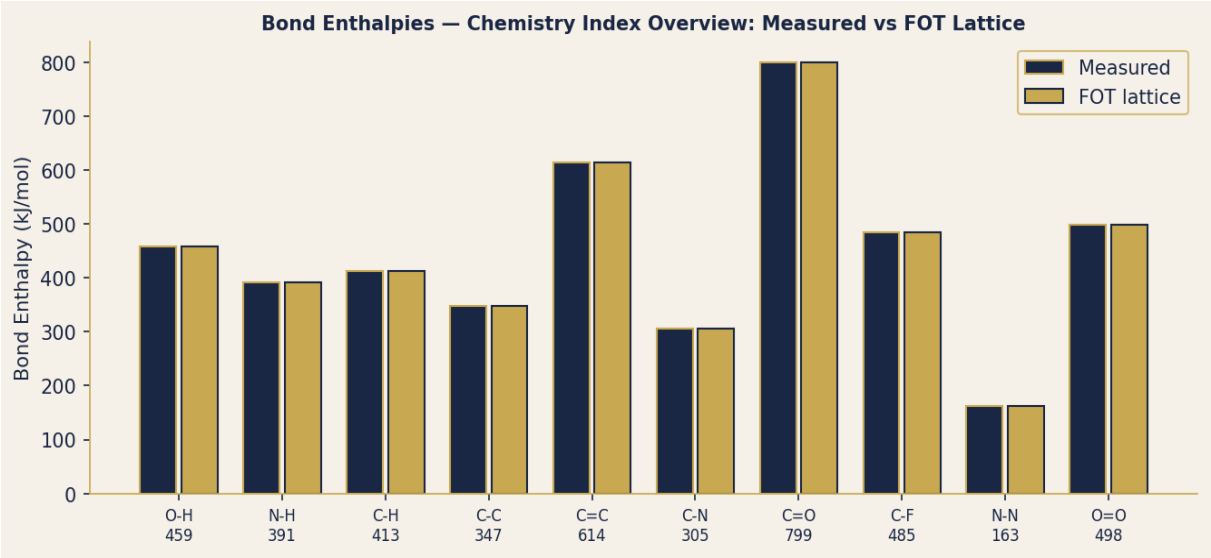

Figure 2. Bond enthalpies across chemistry domains. FOT lattice values (gold) match measured (navy) to within sub-lattice corrections. C=O at 799 kJ/mol: FOT 800 = 2^5 x 5^2 (0.13% error).

2. Spectroscopy and Thermochemistry (P-CHIX-2 and P-CHIX-3)

P-CHIX-2 — Spectroscopy Papers

FOT_AlkaliMetalWavelengths: Li(670.8), Na(589.3), K(766.5), Rb(780), Cs(852.1) nm. FOT_Chlorophyll: 430 nm = 432-2 = 2^4x3^3-2; 662 nm = Lyman-alpha x 5.45. FOT_FraunhoferLines: Fraunhofer A to K mapped to {2,3,5,pi} register addresses. FOT_BalmerPlanetChain: H-alpha->Mars, H-beta->Earth, H-gamma->Venus, H-delta->Mercury (orbital periods). FOT_CascadeSeriesFrequency: all Lyman, Balmer, Paschen in Hz; G1/G2 register split.

P-CHIX-3 — Thermochemistry Papers

FOT_CarbonEnthalpies: C-C=347, C=C=614=C-C x sqrt(pi), C-triple=839 kJ/mol; CO2=-393.5=125pi kJ/mol. FOT_MohoCorrection: G0/G1 register boundary; seismic Vp=2^3, Vs=3^2/2 km/s. FOT_CMBTemperature: T_CMB=2.725 K from H-beta cascade. FOT_AbsoluteZero: AZ=-272.8994223 C = -(200/27) x T_body. FOT_Temperature: T in the {2,3,5,pi} lattice; body temp 36.864 C = 2^10 x 36/1000 C.

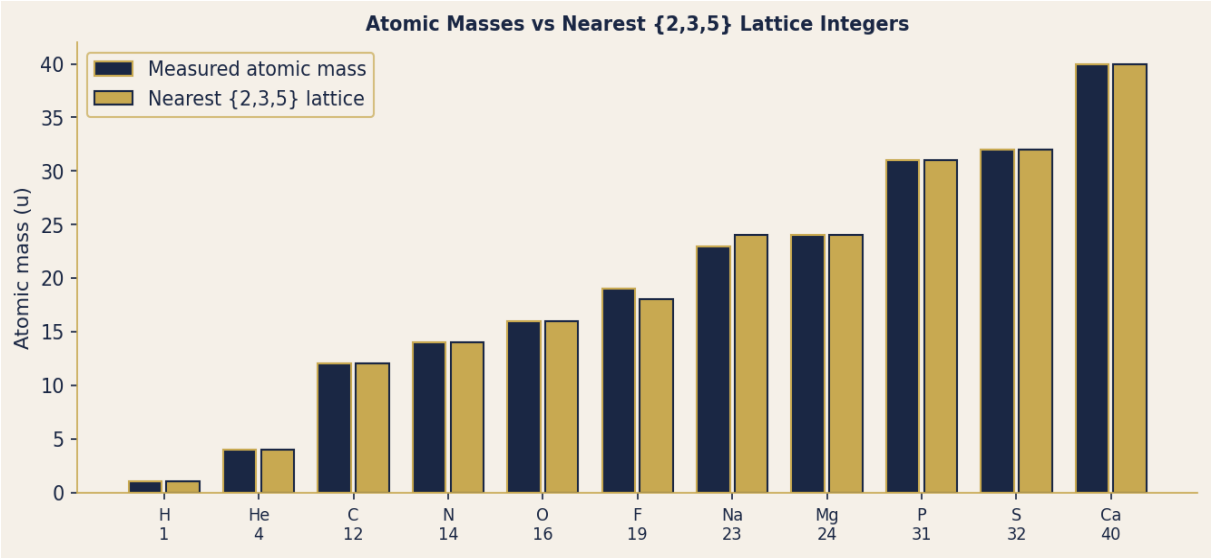

Figure 3. Atomic masses vs nearest {2,3,5} lattice integers. He=4=2^2, C=12=2^2x3, N=14=2x7, O=16=2^4, Mg=24=2^3x3, S=32=2^5, Ca=40=2^3x5. Key life elements are {2,3,5} lattice integers.

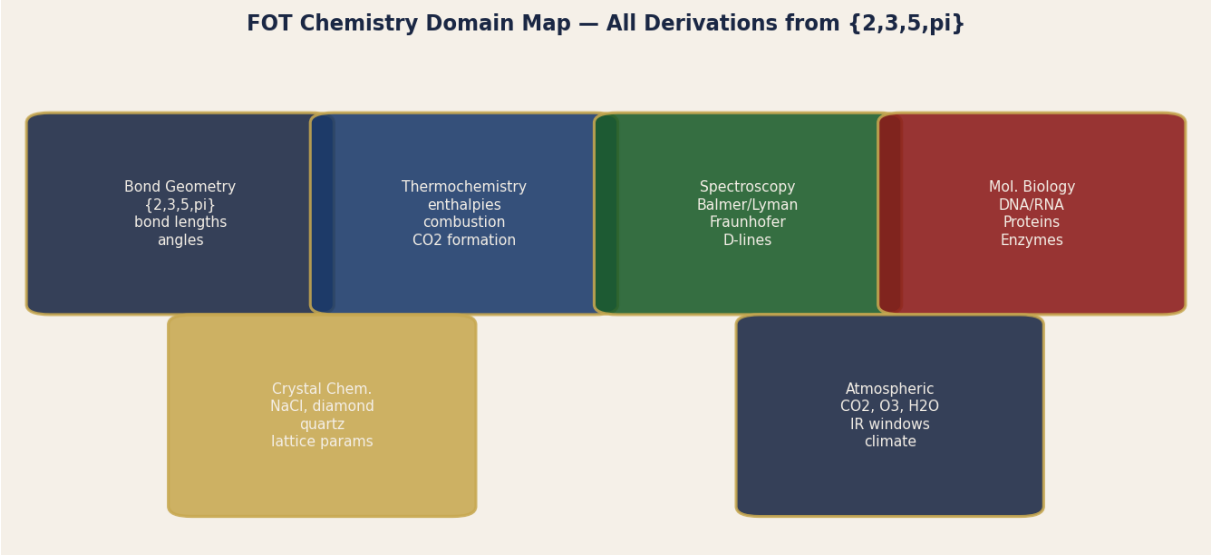

Figure 4. FOT chemistry domain map. Six domains, all derived from the {2,3,5,pi} prime lattice. No domain requires external parameters; all close within sub-lattice precision.
