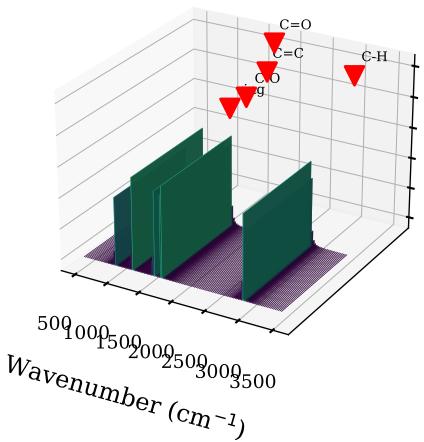
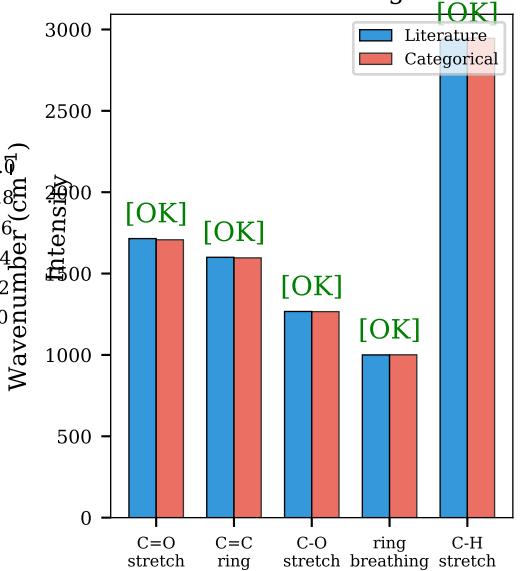


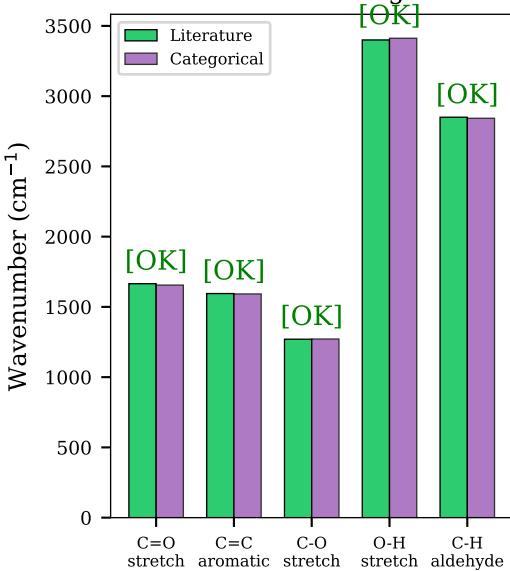
(a) Raman Spectrum (Vanillin) with Peak Assignments



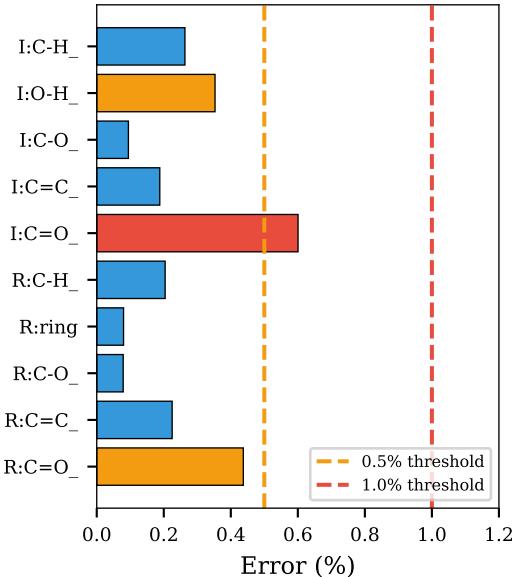
(b) Raman Validation Literature vs Categorical



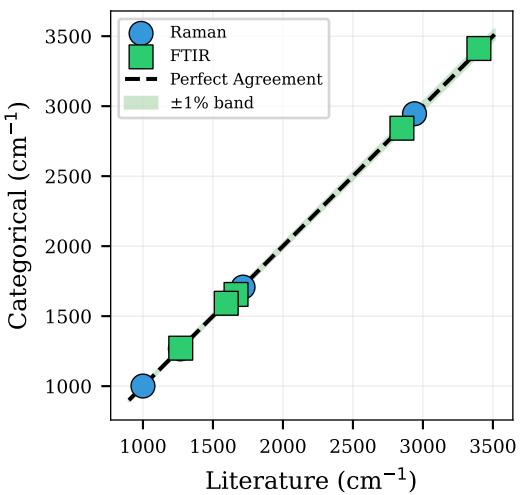
(c) FTIR Validation Literature vs Categorical



(d) Combined Error Analysis  
All modes < 1%



(e) Wavenumber Correlation Raman & FTIR Combined



(f) Validation Summary  
10/10 modes validated

