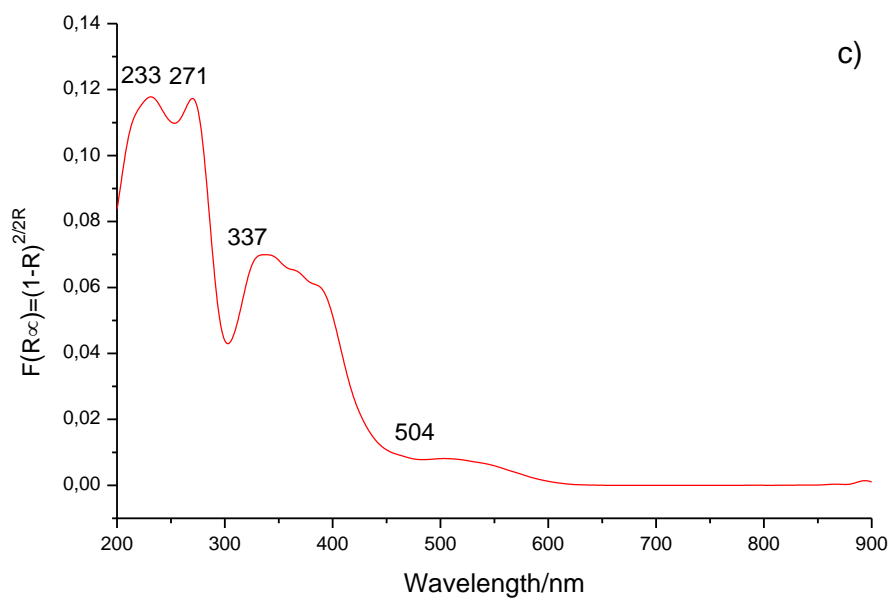
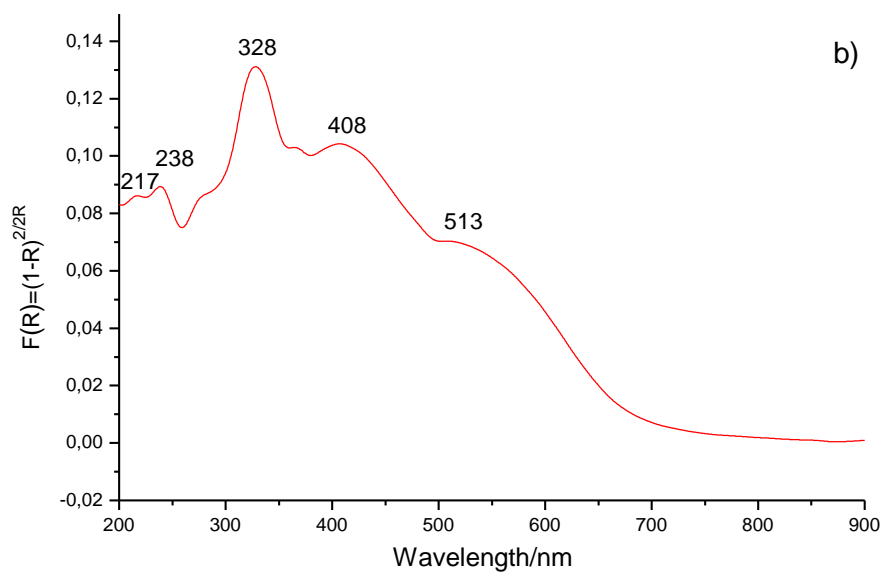
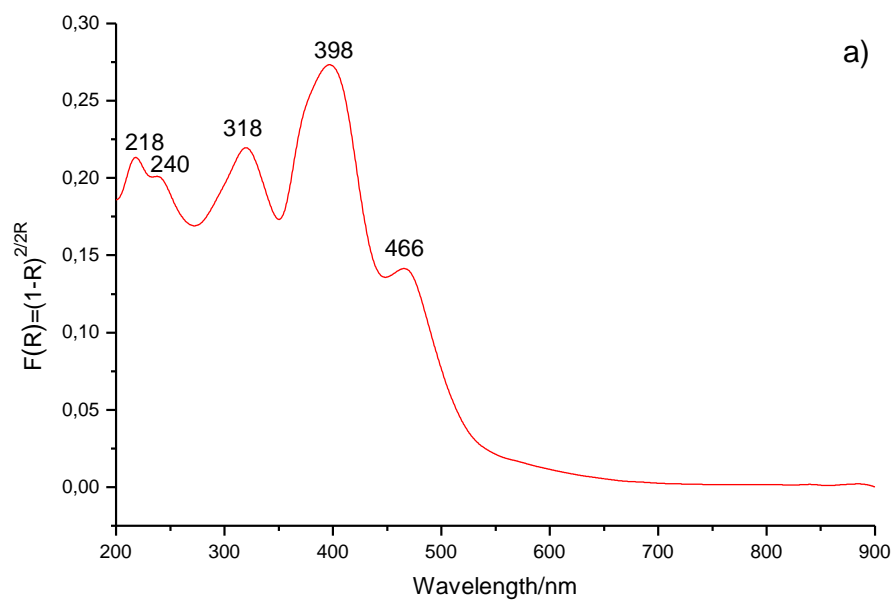


Table S1 The characteristic IR absorption frequencies (cm^{-1}) of free ligands and their ruthenium complexes.

Assignment	2-(2'-Py)BIm	1	2	2-CH ₂ OHBIm	3
$\nu_{\text{O-H}} (\text{H}_2\text{O})$	—	3444	3482	—	3390
$\nu_{\text{O-H}} (\text{ligand})$	—	—	—	3256	3245, 3230
$\nu_{\text{N-H and N-H}^+}$	3082	3210	3185, 3157, 3124	3242	3157
$\nu_{\text{C-H aromatic}}$	3058, 3051	3071, 3045	3087	3056	3063, 3043
$\nu_{\text{C-H methyl}}$	—	2974, 2918, 2837	2981, 2924, 2866, 2844	—	2933, 2910, 2811
$\nu_{\text{C-H methylene}}$	—	—	—	2750	2721
$\nu_{\text{C}\equiv\text{N}}$	—	2297	2341	—	—
$\nu_{\text{C=C ring}}$	1595, 1568	1625, 1612	1647, 1609, 1596	1620, 1588	1662, 1621, 1569
$\nu_{\text{C=N}}$	1487, 1467, 1433	1492, 1475, 1454, 1446	1476, 1455, 1145	1487, 1438	1484, 1459, 1427
ring breathing vibration	1153, 1124	1151, 1137, 1118	1156, 1119	1154, 1114	1153, 1118
$\delta_{\text{C-O}}$	—	—	—	1055, 1036	1072, 1049
ν_{Cl^-}	—	667, 627, 588, 582	669, 627, 616	—	668, 569, 547



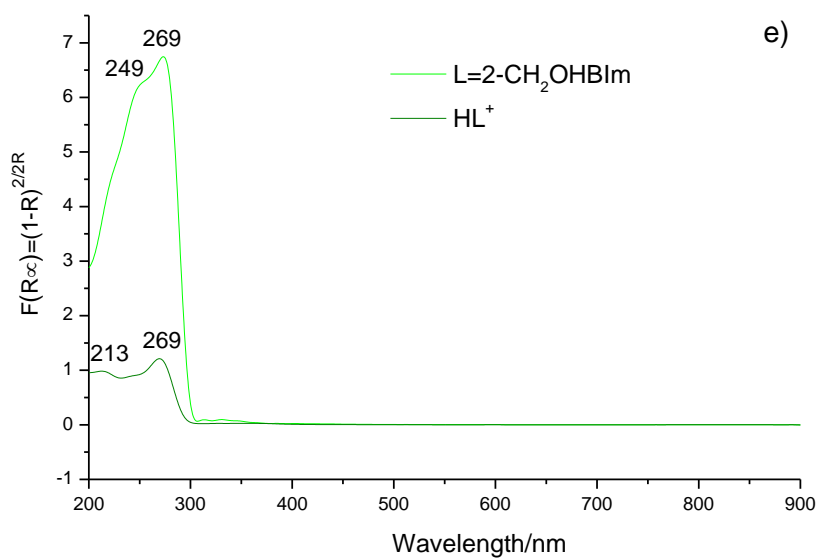
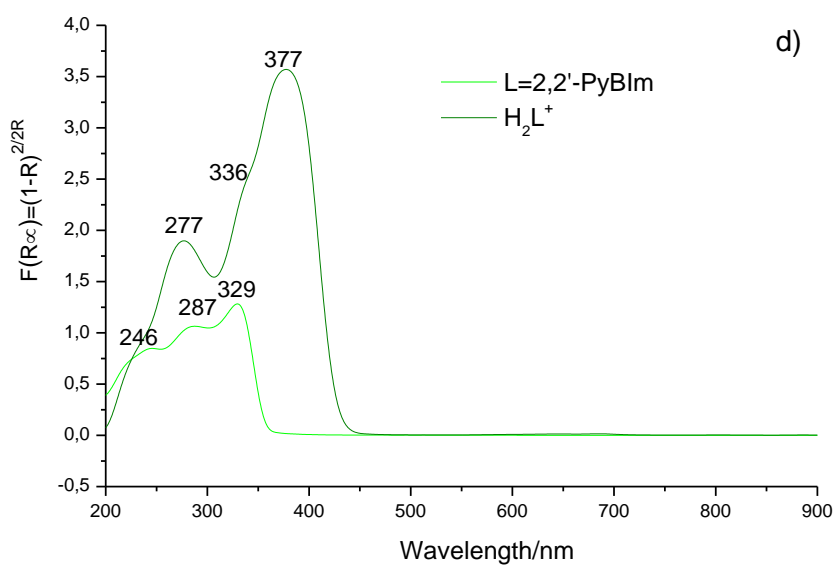


Fig. S1 UV-Vis spectra of complexes: a) **1**, b) **2**, c) **3** and free and protonated ligands d), e).