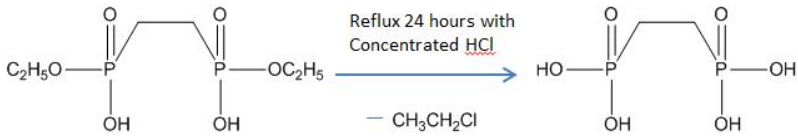
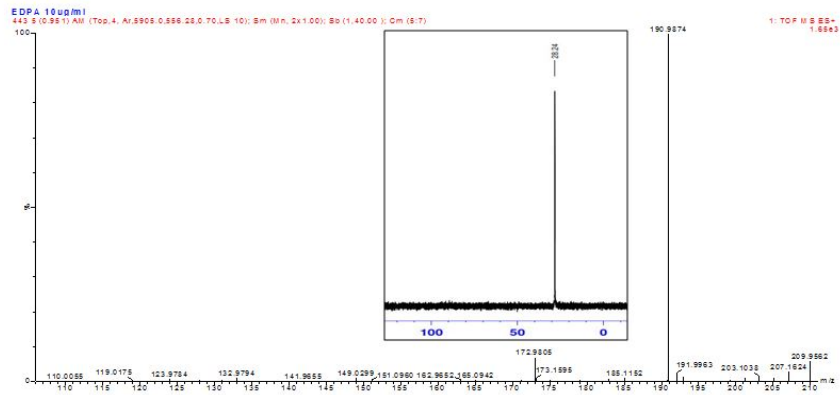
Supporting Information



Supplementary Figure 1: Schematic of the reaction of ethylene diphosphonate (EDP); Tetraethyl ethylene-1,2-diphosphonate (TEDP) was reacted at reflux temperatures with concentrated hydrochloric acid (HCl) and left to stir overnight. The reaction produced a white crystalline product with high yield and purity.

Mass Spectroscopy Analysis of sample ligand BIPs - EDP



Elemental Composition Report

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 50.0

Selected filters: None

Monoisotopic Mass, Even Electron Ions

20 formulas (e) evaluated with 1 result within limits (up to 50 best isotopic matches for each mass)

Elements Used:

C: 0-10 H: 0-50 O: 4-8 P: 1-3

Minimum:				-1.5		
Maximum:		5.0	10.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
190.9874	190.9874	0.0	0.0	-0.5	0.7	C2 H9 O6 P2

Supplementary Figure 2: Mass Spectrometry Spectrum (GCMS-ESI) of EDP. **(Top)** EDP precipitate was weighted and prepared in deionised water at 1 mg mL^{-1}. This solution was then analysed using gas chromatography-mass spectrometry for purity and elemental analysis via

electrospray ionization tandem mass spectrometry (ESI-MS/MS), ESI-MS/MS: m/z 190 amu [M^+]**. (Inset)** Data ^{31}P-{^1H} NMR (162 MHz, D_2O): δ 28.04 (s, P=O). Melting Point: 210°C - 215°C.**(Bottom)** Elemental composition for EDP also was analysed using MALDI-TOF Mass Spectrometry for accurate identification of the elements present.