Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Table S1: Crystallographic data and structure refinement

Crystallographic results	
Chemical Formula :	$HO_{10}P_3 \cdot 4(C_6H_{14}N) \cdot 2(H_2O)$
Mr (g.mol^{-1})	690.67
Crystal System :	Triclinic
Space -Group :	$P\bar{1}$
Unit parameter	
a(Å)	9.7371 (2)
b(Å)	12.1048 (2)
c(Å)	15.7768 (3)
α (°)	71.092 (2)
β (°)	83.131 (1)
γ (°)	87.290 (1)
V(Å^3)	1746.50 (6)
Z	2
F (000)	748
Absorption coefficient μ(mm^{-1})	2.08
Density (mg.m^{-3})	1.313
Cristal form	Block
Cristal color	colourless
Dimension (mm^3)	0.27 × 0.07 × 0.05
Registration conditions	
Diffractometer	Bruker-Nonuis Kappa CCD
Temperature (K)	120
Wave length MoKα (Å)	0.71073
Θ max ; Θ min (°)	79.1 ; 3.0
Tmin ; Tmax	0.614 ; 0.911
Calculated reflections	72331
Independent reflections	7303
Observed reflection [I> 2σ]	6733
h	−12 → 12
k	−15 → 15
l	−20 → 19
Refinement Parameters	
Method directs:	SHELX
Used programs:	WinGx
R_{int}	0.050
R [F^2>2σ(F^2)]	0.033
wR(F^2)	0.089
Goof S	1.07
δ max ; δ min (e Å^{-3})	0.59 ; −0.44
With $w = 1/[\sigma^2(Fo^2) + (0.0215P)^2 + 1.7725P]$ et $P = (Fo^2 + 2Fc^{2)})/3$	

Table S2. Selected geometric parameters for $HO_{10}P_3 \cdot (C_6H_{14}N)_4 \cdot 2(H_2O)$ (Å, °).

Geometric Parameters			
Bond lengths (Å)		Bond angles (°)	
P1—O3	1.5121 (10)	O3—P1—O1	113.01 (6)
P1—O2	1.5166 (9)	O3—P1—O2	114.19 (6)
P2—O5	1.4801 (10)	O1—P1—O2	114.04 (5)
P2—O4	1.5875 (10)	O5—P2—O6	117.01 (6)
P3—O8	1.4912 (10)	O5—P2—O4	112.62 (6)
P3—O10	1.4970 (10)	O8—P3—O9	107.08 (6)
C5B—C6B	1.529 (2)	O10—P3—O9	111.52 (6)
N1C—C1C	1.4895 (19)	C1A—N1A—H1G	110.6 (11)
C1C—C6C	1.512 (2)	C1A—N1A—H1H	109.3 (12)
C1C—C2C	1.527 (2)	N1A—C1A—H1A	108.4
C2C—C3C	1.536 (2)	C6A—C1A—H1A	108.4

Table S3. the conductivity value of $HO_{10}P_3 \cdot (C_6H_{14}N)_4 \cdot 2(H_2O)$ system:

Température (K)	**DC Conductivity (S/Cm^{-1})**
393	$4.88241\ 10^{-10}$
403	$9.25088\ 10^{-10}$
413	$1.71759\ 10^{-09}$
423	$3.82101\ 10^{-09}$
428	$1.08946\ 10^{-08}$
433	$4.05615\ 10^{-08}$
438	$1.73454\ 10^{-07}$
443	$5.273\ 10^{-07}$

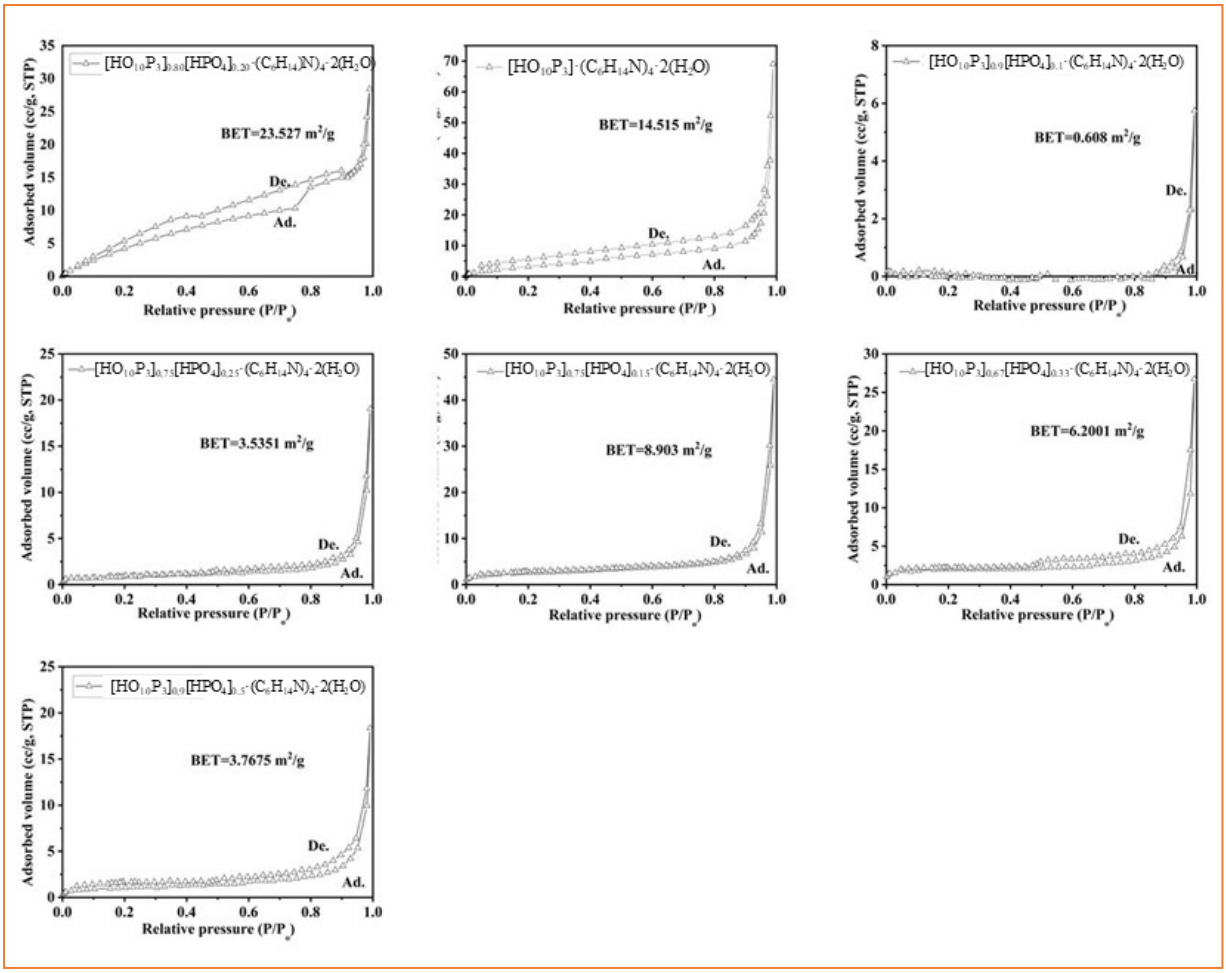

Fig. S1: Nitrogen adsorption-desorption isotherm curves of all the samples.

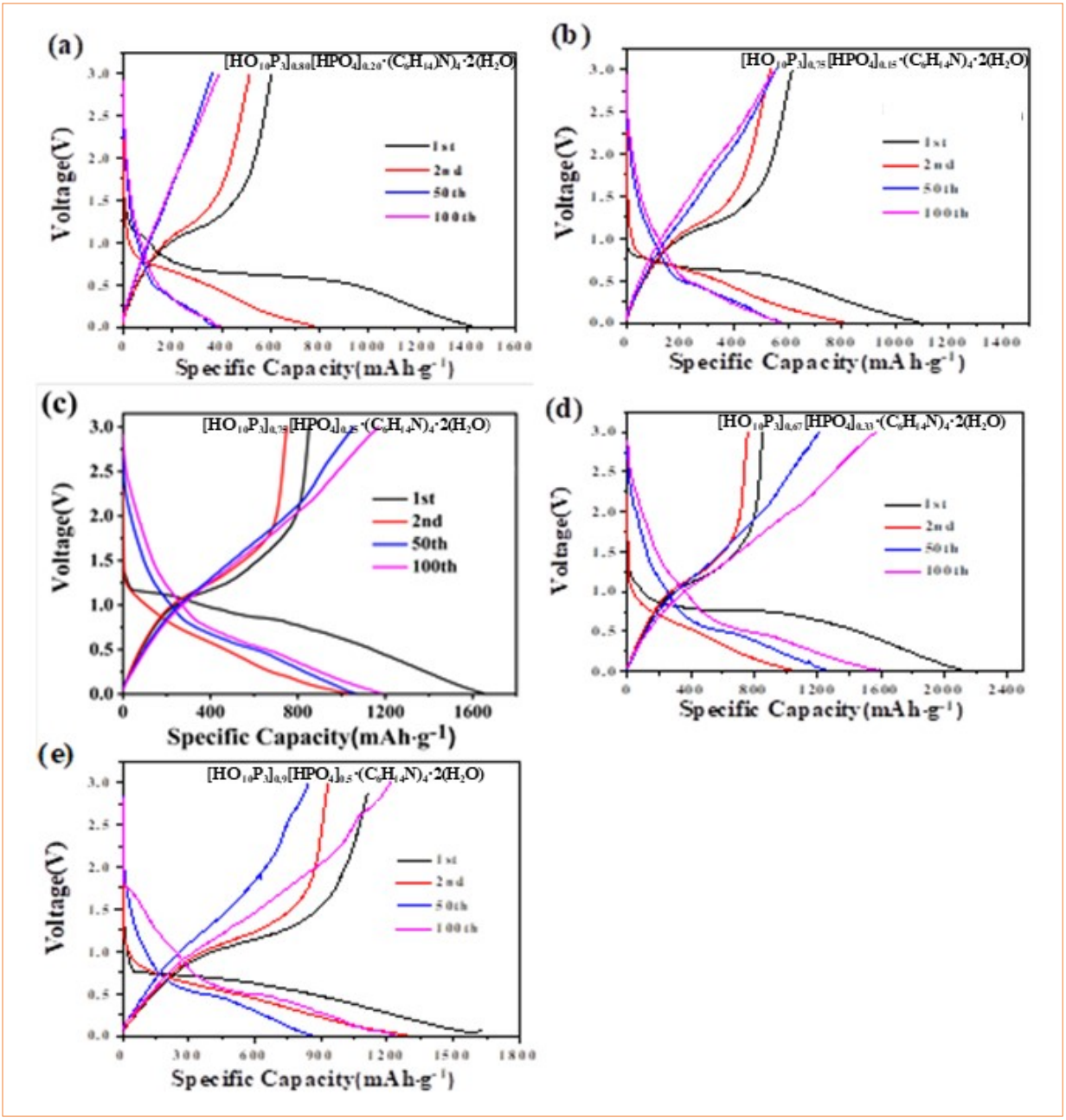

Figure S2. Charge-discharge profiles vs. specific capacity at 100 mA·g^{-1} of (a) $[HO_{10}P_3]_{0.9}[HPO_4]_{0.1}\cdot(C_6H_{14}N)_4\cdot 2(H_2O)$, (b) $[HO_{10}P_3]_{0.80}[HPO_4]_{0.2}\cdot(C_6H_{14}N)_4\cdot 2(H_2O)$, (c) $[HO_{10}P_3]_{0.75}[HPO_4]_{0.25}\cdot(C_6H_{14}N)_4\cdot 2(H_2O)$, (d) $[HO_{10}P_3]_{0.67}[HPO_4]_{0.33}\cdot(C_6H_{14}N)_4\cdot 2(H_2O)$, (e) $[HO_{10}P_3]_{0.5}[HPO_4]_{0.5}\cdot(C_6H_{14}N)_4\cdot 2(H_2O)$.