Supplementary information

Melanin Polymerization Held in Check: A Composite of Dihydroxyphenylalanine with Zeolite Beta

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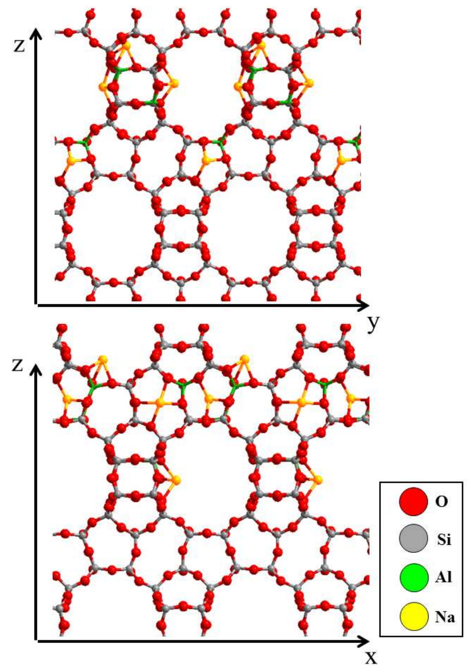

Figure SI-1. 2 × 2 × 1 supercell view along the *xy* and *yz* planes of BEA-type framework showing the framework Al atoms and charge compensating Na^+ cations.

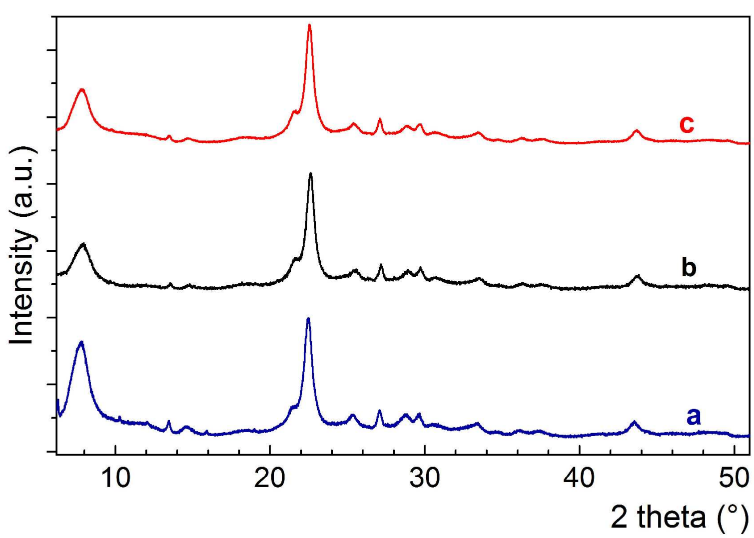

Figure SI-2. X-Ray diffraction patterns of parent zeolite Beta (a), DOPA/Beta pH nat (b) and DOPA/Beta pH 3 (c) composites.

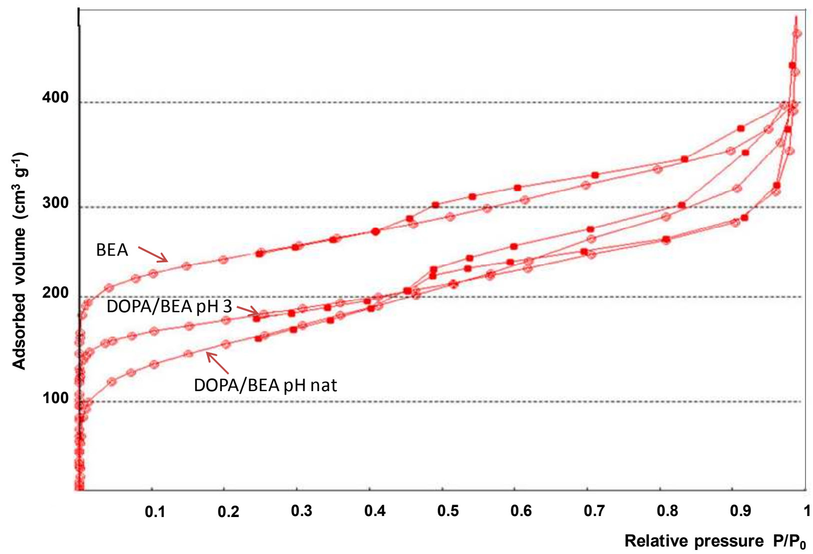

Figure SI-3. N_2 adsorption-desorption isotherms at 77K of pristine and DOPA-loaded Beta zeolites.

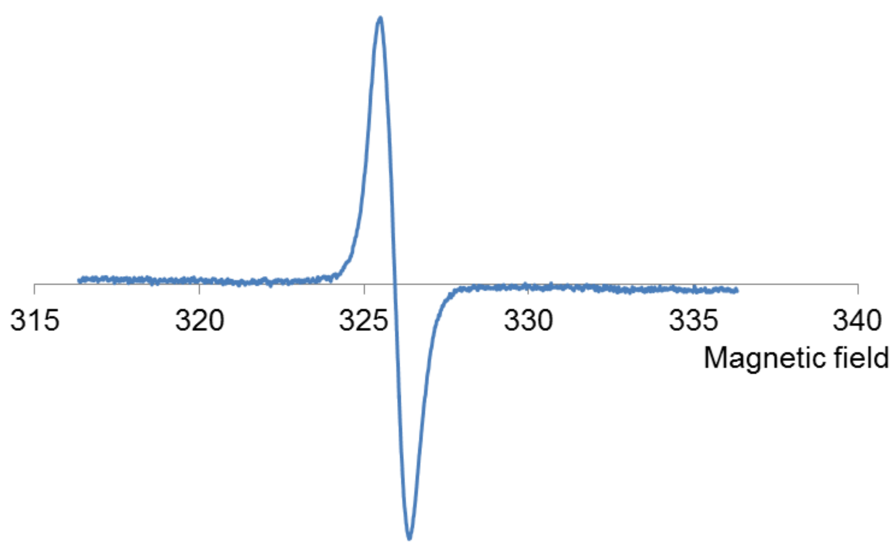

Figure SI-4. EPR spectrum of DOPA/Beta pH nat sample. Spectrum were recorded on a JEOL FA-300 series EPR spectrometer at ~9.3 GHz (X band) at 77 K.

Table SI-1. Raman bands of L-DOPA and their assignments: ν- stretching; ϕ - deformation; τ - torsion; adj - adjacent; R - ring. Figures in square brackets are P.E.D. percentages. (Values in cm^{-1})

Raman band positions (this work)	Raman band positions (Ref. 75*)	Assignment
362	366	ϕ (CCN) adj R [23] + τ (CCCO) R [18]
403	416	τ (HOCC) R [91]
459	465	ϕ (CCC) R [49] + τ (HOCC) R [22]
550	553	τ (HOCC) adj N [44] + ϕ (CCO) adj R [23]
588	592	τ (HOCC) adj N [51]
684	690	τ (CCCC) [72]
718	720	τ (NCC=O) [38]
778	782	τ (HCCO) R [71]
809 (+ sh.)	809	τ (HCCO) R [78]
	814	τ (NHCH) [56] + ν (CC) adj N [14]
838	845	τ (HCCO) [78]
866	870	τ (HCCC) adj R [28] + τ (NHCH) [21]
919	922	ν (CC) adj R [57] + ϕ(CCC) R [14]
944	-	?
982	986	ν (CC) adj N [57]
1062	1065	ν (NC) [50] + ϕ (HNC) [13] + ϕ(HCN) [10]

1120	1124	ϕ (HCC) R [36] + ν (CCR) [17] + ϕ (HOC) R [10]
1159	1165	ϕ (HCC) R [28] + ϕ (HOC) adj N [17] + ν (CC) adj O [12]
1295	1285 (S)	τ (HCCC) adj R [54]
	1300	ϕ (HOC) adj N [28] + ν (CC) adj O [17] + ϕ (HCN) [12]
1346	1350	ν (CC) R [36] + ϕ (HOC) R [31]
1404	1407	ν (CC) R [52] + ϕ (HCC) R [16]
1438	1445	ϕ (HCH) [88]
1497	1500	ν (CC) R [53] + ϕ (HCC) adj N[16]
1610	1610	ν (C=C) R [68]
1631	-	?

* Siddiqui, S. A.; Pandey, A. K.; Dwivedi, A.; Jain, S.; Misra, N. Comparative Conformational, Structural and Vibrational Study on the Molecular Structure of Tyrosine and L-Dopa Using Density Functional Theory. *J. Chem. Pharm. Res.* **2010**, *2*, 835-850.