Supplementary materials

Table S1. Operating parameters introduced in ANFIS edit tool.

Sample No.	Act. Agent (A)	Temperature ºC (T)	Ratio (D)	CO_2 Uptake mg/g (y_e)
1	1	760	0.5	37.3
2*	1	800	0.5	37.4
3	1	800	0.66	32.7
4	1	800	0.33	36.4
5	1	840	0.5	35.3
6	2	760	0.33	45.6
7	2	760	0.66	14.8
8	2	800	0,5	37.6
9	2	840	0.66	22.7
10	2	840	0.33	35.1
11	0	760	0	26.4
12	0	800	0	11.7
13	0	840	0	6.4

*Central point

```
function y=adco2(A,T,D)
a1=-0.2391;
a2=79.22; a3=-
23.15;
a4=72.34; a5=-
44.18;
a6=107.1;
a7=107.3; a8=-
28.17;
a9=114.8;
a10=-16.98;
a11=60.34;
a12=3.496;
c11=-0.0005325;
an11=0.8484;
c12=2;
an12=0.8489; c21=760;
an21=16.99;
c22=800;
an22=16.99;
c23=840;
an23=16.99;
c31=0.2083;
an31=0.341;
c32=0.6699;
an32=0.4854;
f11=exp(-.5*((A-c11)./an11).^2);
f12=exp(-.5*((A-c12)./an12).^2);
f21=exp(-.5*((T-c21)./an21).^2);
f22=exp(-.5*((T-c22)./an22).^2);
f23=exp(-.5*((T-c23)./an23).^2);
```

```
f31=exp(-.5*((D-c31)./an31).^2);
f32=exp(-.5*((D-c32)./an32).^2); y=(a1.*f11.*f21.*f31 +a2.*f11.*f21.*f32 +a3.*f11.*f22.*f31 +a4.*f11.*f22.*f32
+a5.*f11.*f23.*f31 +a6.*f11.*f 23.*f32 +a7.*f12.*f21.*f31 +a8.*f12.*f21.*f32 +a9.*f12.*f22.*f31 +a10.*f12.*f22.*f32
+a11.*f12.*f23.*f31 +a12.*f12.*f23.*f32). /(f11.*f21.*f31 +f11.*f21.*f32 +f11.*f22.*f31 +f11.*f22.*f32 +f11.*f23.*f31
+f11.*f23.*f32 +f12.*f21.*f31 +f12.*f21.*f32 +f12.*f22.*f31 +f12.*f22.*f32 +f12.*f23.*f31 +f12.*f23.*f32); end
```

Script S1. Script designed from the experimental results, and neuro-fuzzy variables. This script was used to carry out CO_2 adsorption predictions.