

The adsorption features, surface polarity and enantioselectivity of chiral zeolite-like material cobalt borophosphate

Zhanna D Uteeva, ^a Elina R. Mansurova, ^a Alsu Sh. Nuretdinova, ^a Marat R. Agliullin, ^b Rezeda Z. Kuvatova, ^b Timur A. Mukhametzyanov, ^c Vladimir Yu. ^aGuskov ^a

^a Ufa University of Science and Technology, Ufa, 450076, Russia.

^b Institute of Petrochemistry and Catalysis RAS, Ufa, 450076, Russia.

^c Kazan Federal University, Kazan, 450008, Russia

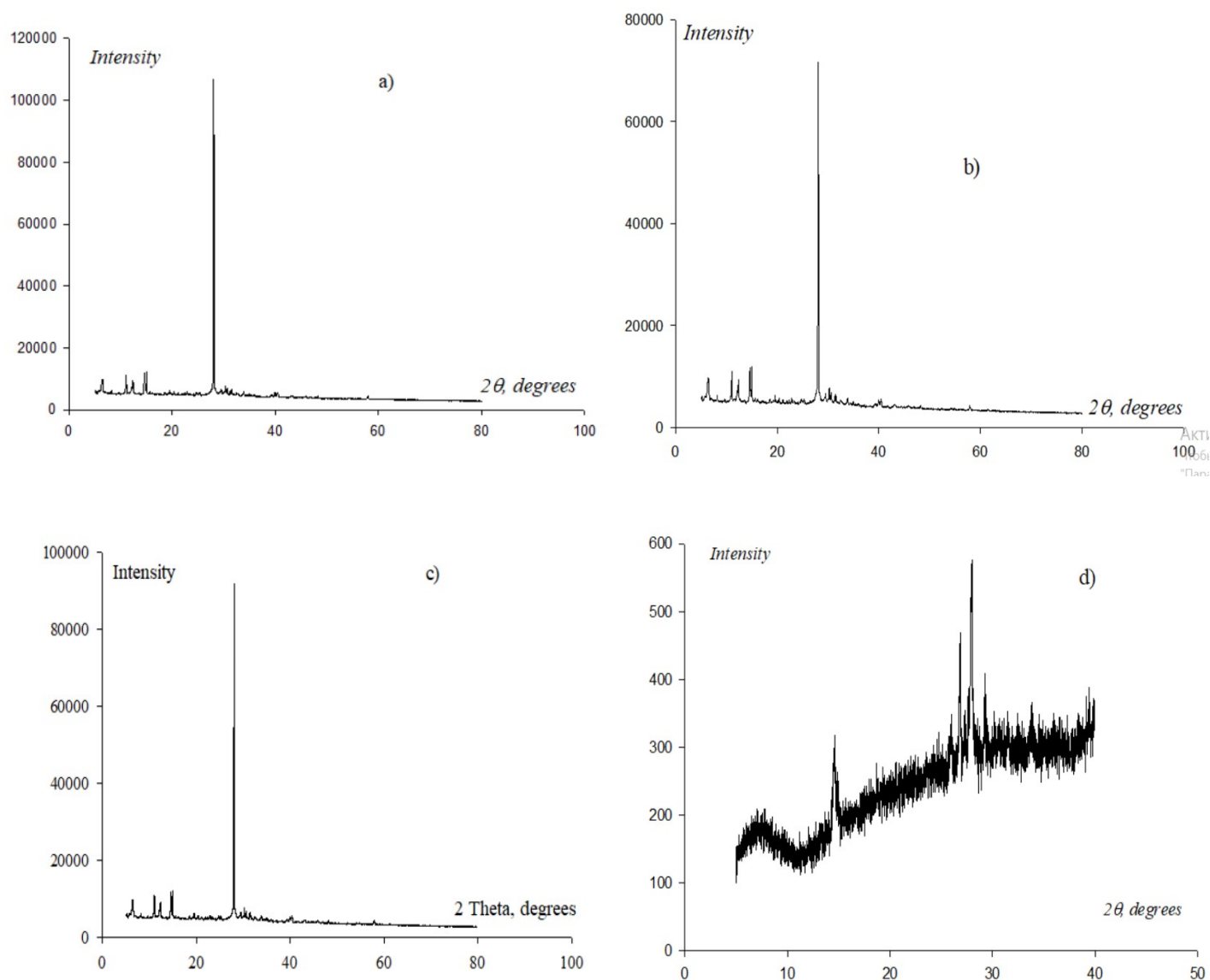


Fig. 1S. PXRD Z-CoBP a) [CD(-)208]; b) [CD(+)-208]; c) [CD 208]; d) after heating at 160 C

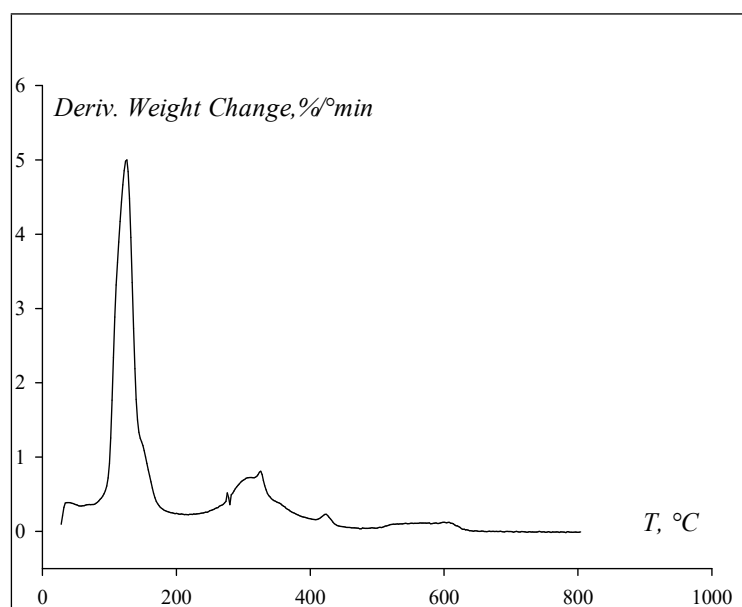


Fig. 2S. Integral TGA curve $\text{Co}_{1.28}(\text{NH}_4)_{0.44}(\text{BP}_2\text{O}_8) \cdot (\text{H}_2\text{O})_{2.41}$

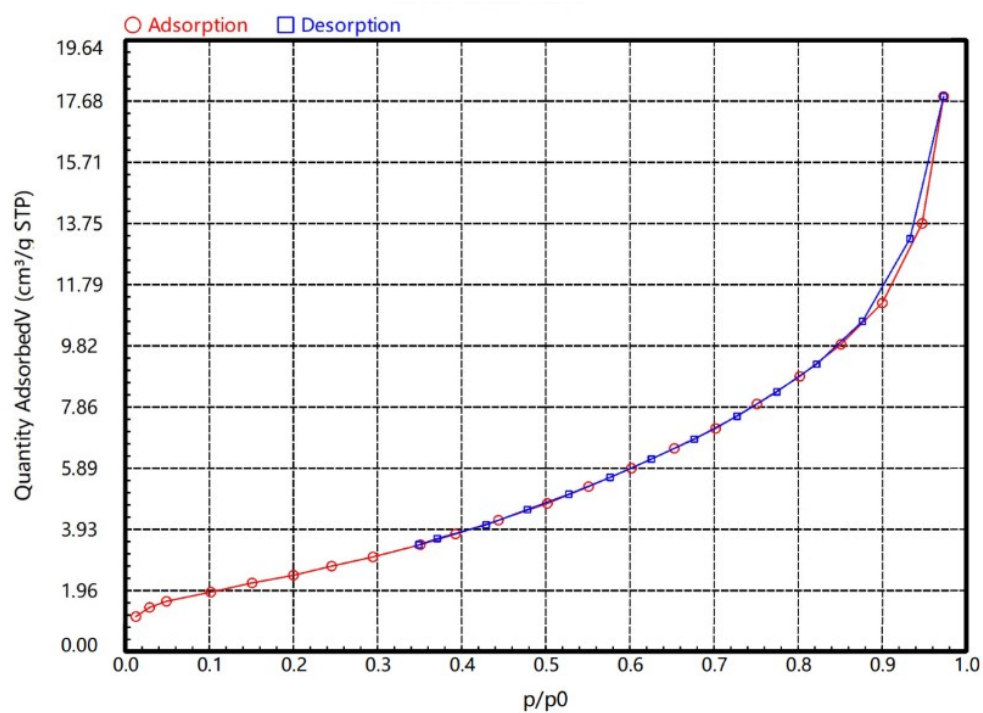


Fig. 3S. Nitrogen adsorption–desorption isotherms and pore size.

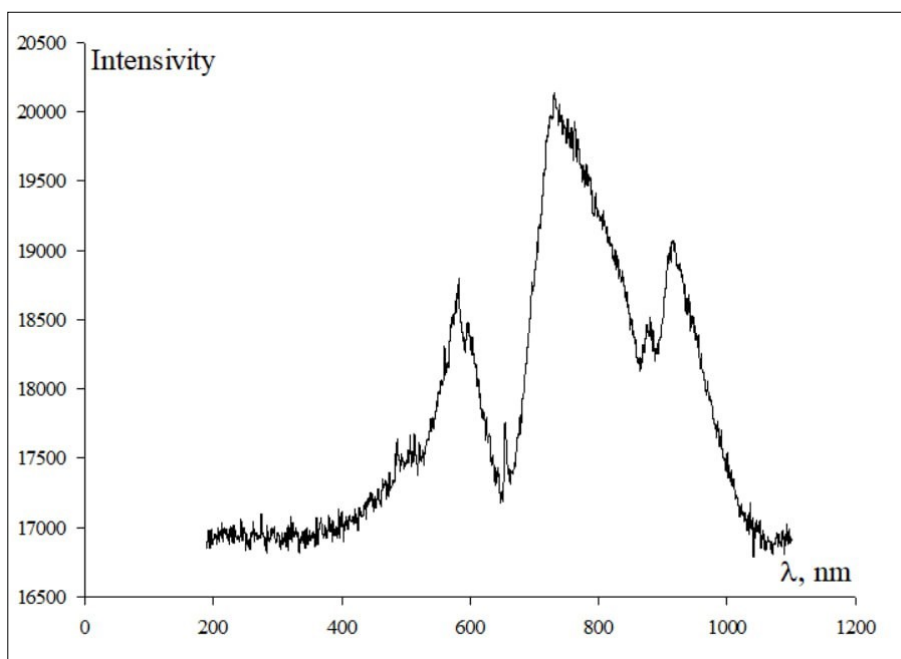


Fig. 4S. UV – spectrum $\text{Co}_{1.28}(\text{NH}_4)_{0.44}(\text{BP}_2\text{O}_8) \cdot (\text{H}_2\text{O})_{2.41}$

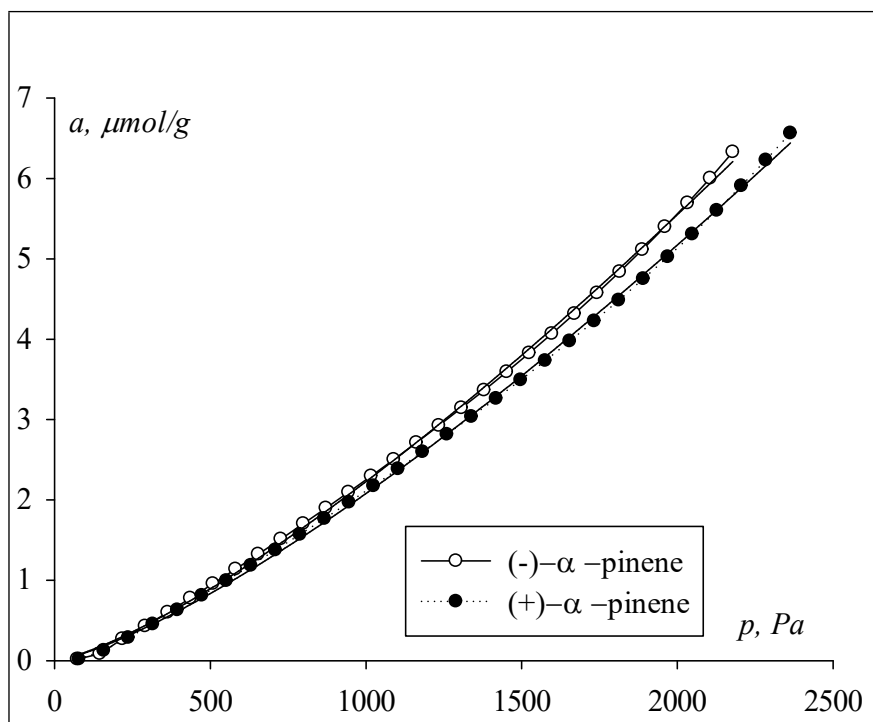


Fig. 5S. Adsorption isotherm of α -pinene enantiomer vapours at 65°C

Table1S. P-values for pairs of points of α -pinenes vapours adsorption at 65°C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
72.1	0.1746	1441.8	0.2205
216.3	0.8477	1586.0	0.0339
576.7	0.1137	1658.1	0.0319
720.9	0.1329	1874.4	0.0262
1009.3	0.1851	1946.5	0.0238
1225.6	0.6712	2162.8	0.0168

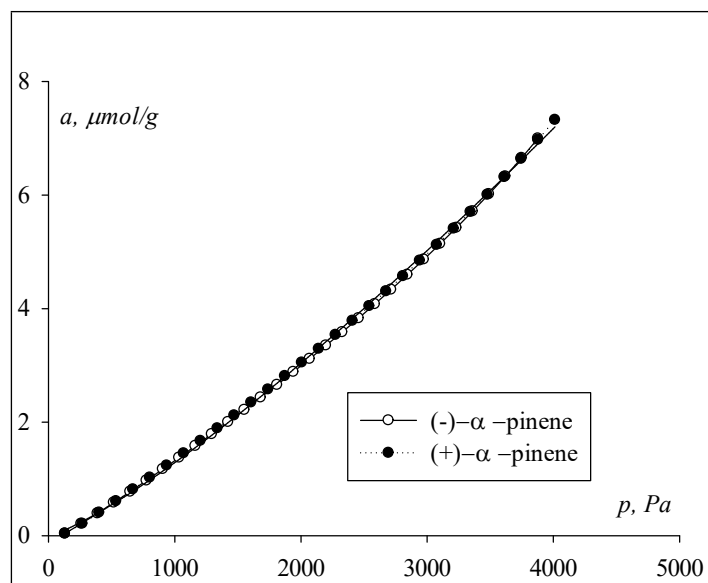


Fig. 6S. Adsorption isotherm of α -pinene enantiomer vapours at 75^oC

Table 2S. P-values for pairs of points of α -pinenes vapours adsorption at 75 °C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
126.2	0.7190	3791.4	0.0329
505.9	0.4231	3285.8	0.0350
884.4	0.2632	2780.2	0.0217
1263.7	0.4703	2274.7	0.0402
1516.3	0.1506	1895.9	0.0330

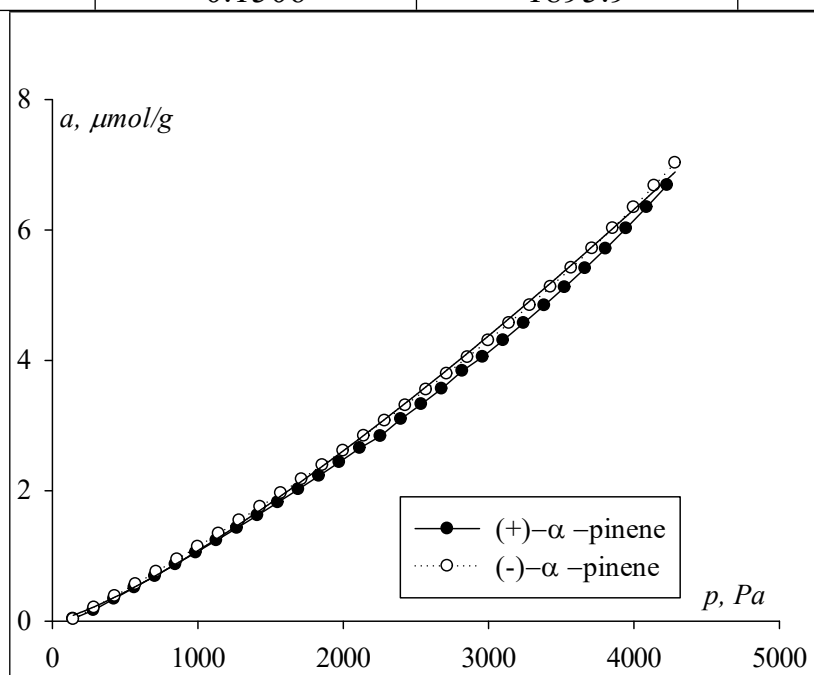


Fig. 7S. Adsorption isotherm of α -pinene enantiomer vapours at 80^oC

Table 3S. P-values for pairs of points of α -pinenes vapours adsorption at 80 °C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
130.4	0.7190	2049.9	0.8590
515.5	0.4231	2497.4	0.8093
1023.3	0.1656	2958.6	0.9234
1254.4	0.1291	3248.8	0.3744
1634.7	0.2279	3791.3	0.4607

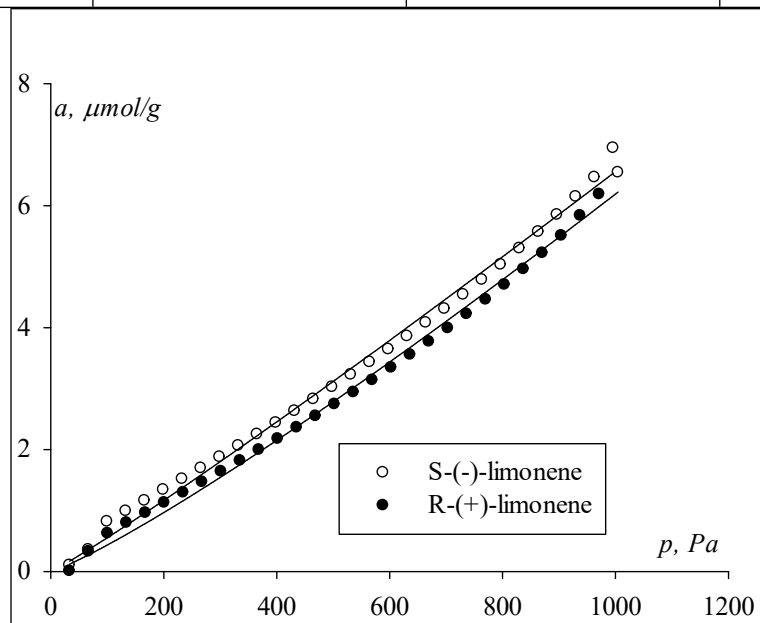


Fig 8S. Adsorption isotherm of limonene enantiomer vapours at 70°C

Table 4S. P-values for pairs of points of limonene vapours adsorption at 70 °C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
100.9	0.0403	605.4	0.0035
201.8	0.0315	706.3	0.0023
302.7	0.0170	840.8	0.0160
403.6	0.0099	941.7	0.0184
504.5	0.0059	1009.0	0.0006

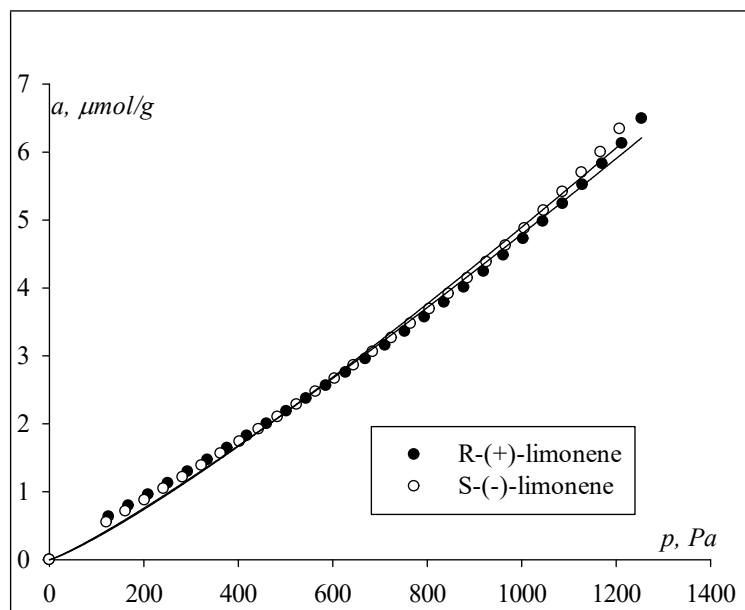


Fig 9S. Adsorption isotherm of limonene enantiomer vapours at 75⁰C

Table 5S. P-values for pairs of points of limonene vapours adsorption at 75 °C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
124.9	0.1440	749.4	0.4828
249.8	0.1461	874.3	0.5518
374.7	0.1385	999.2	0.5925
499.6	0.2926	1124.1	0.3440
624.5	0.3945	1207.3	0.5145

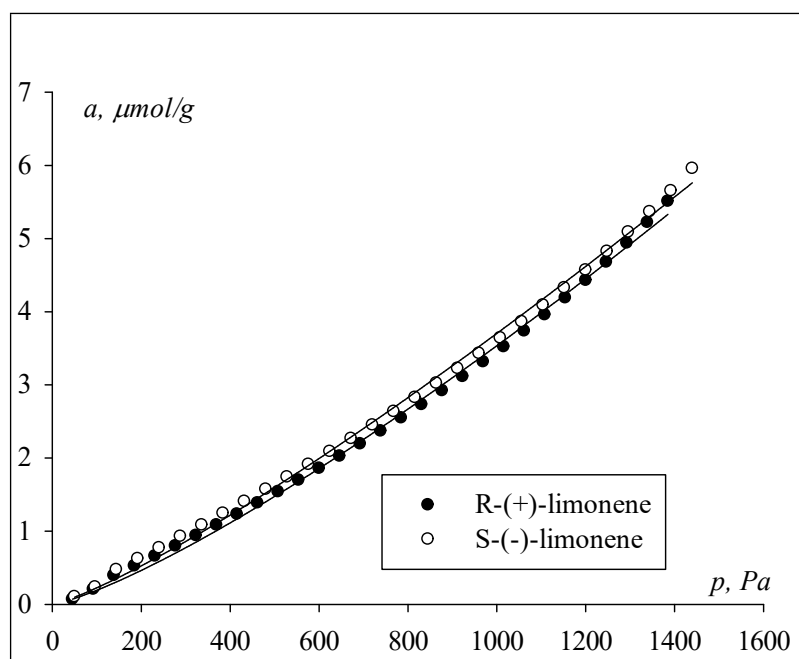
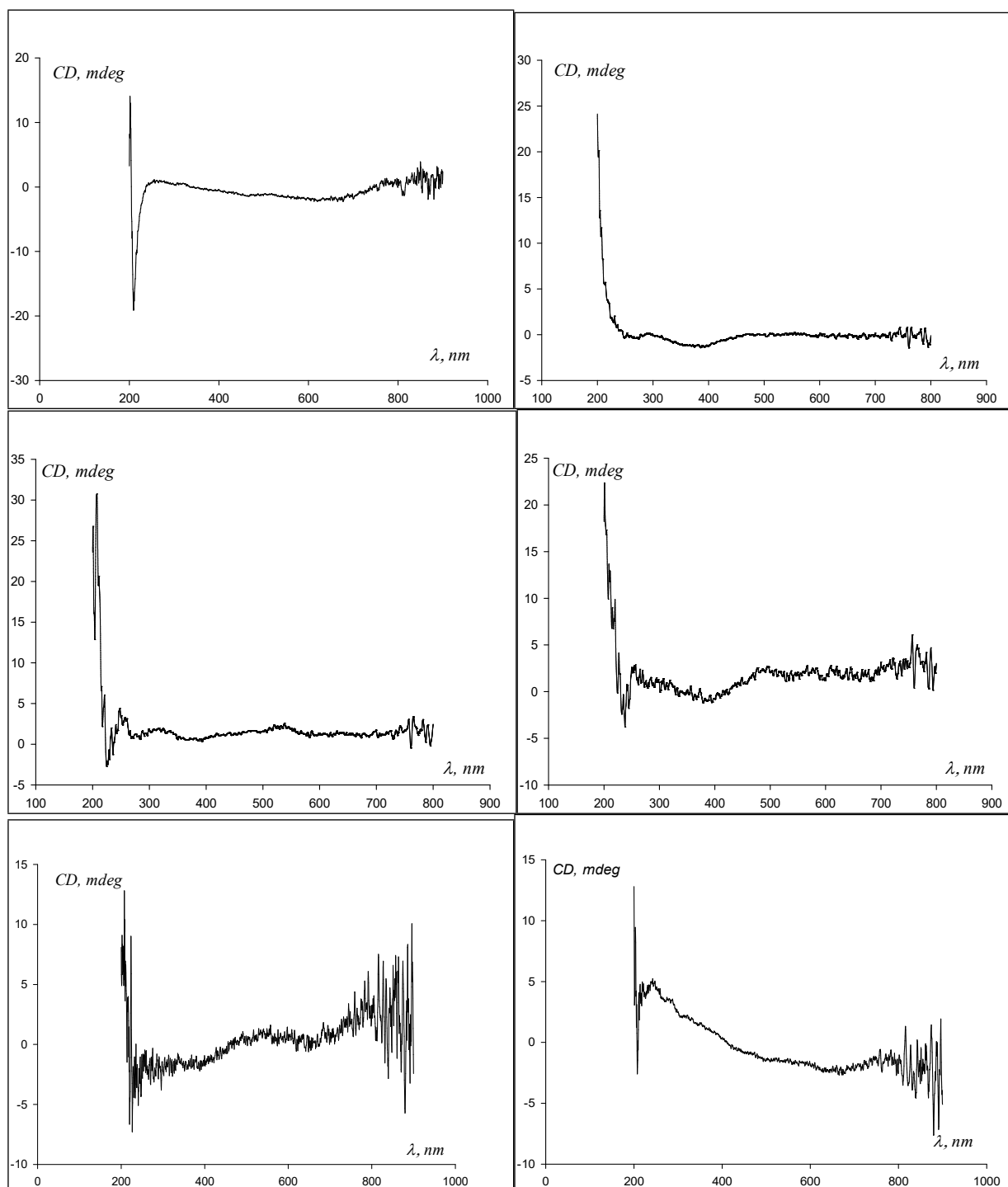


Fig 10S. Adsorption isotherm of limonene enantiomer vapours at 80⁰C

Table 6S. P-values for pairs of points of limonene vapours adsorption at 80 °C ($\alpha = 0.05$)

p, Pa	p	p, Pa	p
179.5	0.0226	852.8	0.0929
314.2	0.0186	987.4	0.2792
448.8	0.4349	1122.0	0.5230
583.5	0.1247	1256.7	0.6919
718.1	0.1032	1346.5	0.5683



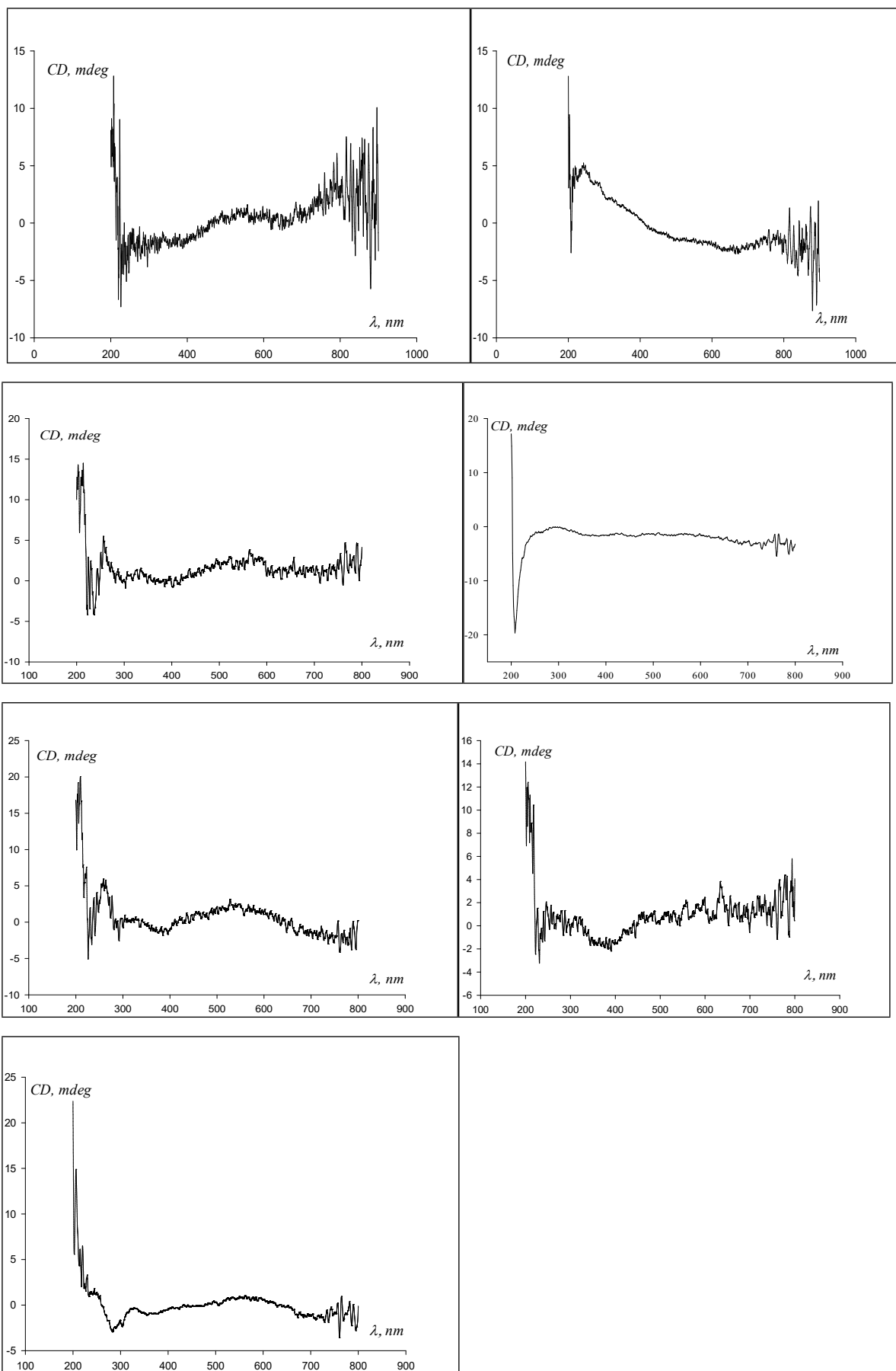


Fig 11S. CD spectra for Z-CoBP