CLAIMS:

1. A synthetic porous crystalline material, EMM-26, including, in its as-calcined form, an X-ray diffraction pattern including the d-spacings and relative intensities listed in the Table below.

d (Å)	Relative intensity
9.8-9.0	60-100
8.75-9.15	5-30
7.00-7.40	10-40
5.60-5.80	3-15
5.25-5.38	8-20
4.14-4.24	5-20
3.88-3.96	25-70
3.55-3.63	20-60
3.30-3.38	10-25
3.02-3.10	2-10

2. A synthetic porous crystalline material, EMM-26, including, in its as-synthesized form, an X-ray diffraction pattern including the d-spacings and relative intensities listed in the Table below.

d (Å)	Relative intensity
10.0-9.5	60-100
7.32-7.08	5-30
4.93-4.83	1-20
4.30-4.22	10-40
4.22-4.15	10-40
4.18-4.11	5-30
4.07-3.99	20-70
4.01-3.94	20-70
3.97-3.90	5-30
3.906-3.839	10-40
3.883-3.817	5-30
3.735-3.674	10-40
3.630-3.572	10-40
3.395-3.345	5-30
3.303-3.255	5-30
3.129-3.087	1-20
3.098-3.056	5-30
2.968-2.930	1-20
1.944-1.928	1-20

3. The crystalline material of any one of the previous claims, wherein the crystalline material includes tetrahedral atoms including one or more elements selected from the group consisting of B, and Si.

4. The crystalline material of any one of the previous claims, wherein the crystalline material includes bridging atoms including oxygen.

5. The crystalline material of any one of claims 2-4, having the following composition:

$$aHal:bQ:cX_2O_3:YO_2:zH_2O,$$

wherein Hal is a halide ion; Q is an organic structure directing agent selected from one or more of 1,6-bis(N-methyl-pyrrolidinium) hexane dications and 1,6-bis(N- methylpiperidinium) hexane dications, X is a trivalent element, Y is a tetravalent element, a is a number having a value equal to or greater than 0 to less than or equal to 0.2, b is a number having a value greater than 0 to less than or equal to 0.10, $0.015 < c < 0.125$, and z is a number having a value greater than or equal to 0 to less than or equal to 0.15.

6. The crystalline material of any one of claims 2-4, having the following composition:

$$mM:bQ:cX_2O_3:YO_2:zH_2O,$$

wherein M is an alkali or alkaline earth metal; Q is an organic structure directing agent selected from one or more of 1,6-bis(N-methylpyrrolidinium) hexane dications and 1,6-bis(N-methylpiperidinium) hexane dications, X is a trivalent element, Y is a tetravalent element, m is a number having a value equal to or greater than 0 to less than or equal to 0.1, b is a number having a value greater than 0 to less than or equal to 0.10, $0.015 < c < 0.125$, and z is a number having a value greater than or equal to 0 to less than or equal to 0.15.

7. The crystalline material of claim 5 or claim 6, wherein the structure directing agent (Q) is provided as the hydroxide of the organic structure

directing agent.

8. The crystalline material of claim 5 or claim 6, wherein X comprises boron and Y comprises silicon.

9. The crystalline material of claim 8, wherein the crystalline material has a B_2O_3 to SiO_2 molar ratio from 0.125 to 0.033.

10. The crystalline material of claim 9, wherein the crystalline material has a sorption capacity for CO_2 at 1 atm (100 kPa) from 0.8 mmol/g to 2.0 mmol/g.

11. A process for preparing an EMM-26 crystalline material independently, or according of any one the preceding claims, the method comprising the steps of:
(a) providing a reaction mixture comprising sources of water, an oxide of a tetravalent element Y comprising Si, an oxide of a trivalent element X comprising B, optionally a source of halide ions, optionally a source of hydroxide ions, and a structure directing agent (Q) selected from one or more of 1,6-bis(N-methylpyrrolidinium) hexane dications and 1,6-bis(N- methylpiperidinium) hexane dications;
(b) heating the reaction mixture under crystallization conditions including a temperature of from 100°C to 200°C until crystals of the EMM-26 crystalline material are formed;
(c) recovering crystals produced in (b); and
optionally (d) treating the crystals recovered in (c) to remove at least part of the structure directing agent (Q),

wherein the crystals produced in (b) have an X-ray diffraction pattern including the d- spacings and relative intensities as listed in the Table below.

d (Å)	Relative intensity
10.0-9.5	60-100
7.32-7.08	5-30
4.93-4.83	1-20
4.30-4.22	10-40
4.22-4.15	10-40
4.18-4.11	5-30

4.07-3.99	20-70
4.01-3.94	20-70
3.97-3.90	5-30
3.906-3.839	10-40
3.883-3.817	5-30
3.735-3.674	10-40
3.630-3.572	10-40
3.395-3.345	5-30
3.303-3.255	5-30
3.129-3.087	1-20
3.098-3.056	5-30
2.968-2.930	1-20
1.944-1.928	1-20

12. The process of claim 11, wherein the reaction mixture further includes a source of hydroxide ions and the molar ratio of the oxide of the trivalent element X to the oxide of the tetravalent element Y is less than or equal to 0.125, the molar ratio of water to the oxide of the tetravalent element Y is in the range of 10 to 80, the molar ratio of hydroxide ions to the oxide of the tetravalent element Y is in the range of 0.1 to 1.0, and the molar ratio of structure directing agent (Q) to the oxide of the tetravalent element Y is in the range of 0.03 to 0.6.

13. The process of claim 12, wherein the molar ratio of the oxide of the trivalent element X to the oxide of the tetravalent element Y is in the range of 0.05 to 0.1, the molar ratio of water to the oxide of the tetravalent element Y is in the range of 15 to 40, the molar ratio of hydroxide ions to the oxide of the tetravalent element Y is in the range of 0.2 to 0.5, and the molar ratio of structure directing agent (Q) to the oxide of the tetravalent element Y is in the range of 0.05 to 0.25.

14. The process of any one or more of claims 11-13, wherein the reaction mixture further includes a source of hydroxide ions, the source of hydroxide ions provided by hydroxides of the structure directing agent (Q).

15. The process of claim 11, wherein the reaction mixture further includes a source of halide ions and the molar ratio of the oxide of the trivalent element X to the oxide of the tetravalent element Y is in the range of 0.02 to 0.025, the molar ratio of

water to the oxide of the tetravalent element Y is in the range of 5 to 40, the molar ratio of halide ions to the oxide of the tetravalent element Y is in the range of 0.15 to 0.5, and the molar ratio of structure directing agent (Q) to the oxide of the tetravalent element Y is in the range of 0.1 to 0.3.

16. A process for separation of carbon dioxide from a mixture comprising carbon dioxide and one or more of an alkane, oxygen, nitrogen, H_2S, SO_x and NO_x, the process comprising contacting the mixture with the porous crystalline material of any one or more of claims 1-10**.**

17. A process for separation of carbon dioxide from a mixture comprising carbon dioxide and methane, the process contacting the mixture with the porous crystalline material of any one or more of claims 1-10.