Supporting information:

A crystalline germanate with mesoporous 30-ring channels

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Table S1 Crystal data and structure refinement for compound **JLG-12**.

Identification code	JLG-12
Empirical formula	C180 H600 Ge139.73 N60 O339.45
Formula weight	19181.40
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system, space group	Monoclinic, *C*2/*m*
Unit cell dimensions	a = 46.377(9)Å α = 90° b = 26.689(5)Å β = 92.84(3)° c = 12.107(2)Å γ = 90°
Volume	14967(5) $Å^3$
Z, Calculated density	1, 2.128 Mg/m^3
Absorption coefficient	6.988 mm^{-1}
F(000)	9287
Crystal size	0.050 × 0.020 × 0.020 mm^3
Theta range for data collection	2.22 to 24.50°
Limiting indices	$-50 \le h \le 54$, $-29 \le k \le 30$, $-13 \le l \le 12$
Reflections collected / unique	35786 / 12325 [R(int) = 0.1629]
Completeness to theta = 24.50	96.6 %
Absorption correction	CrysAlis
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	12325 / 0 / 347
Goodness-of-fit on F^2	0.907
Final R indices [I>2σ(I)]	$R1$ = 0.0938, $wR2$ = 0.2237
R indices (all data)	$R1$ = 0.1436, $wR2$ = 0.2436
Largest diff. peak and hole	3.602 and -2.397 e. $Å^{-3}$

* $R_1=\Sigma(\Delta F/\Sigma(F_o))$; $wR_2=(\Sigma[w(F_o^2-F_c^2)])/\Sigma[w(F_o^2)^2]^{1/2}$, $w=1/\sigma^2(F_o^2)$

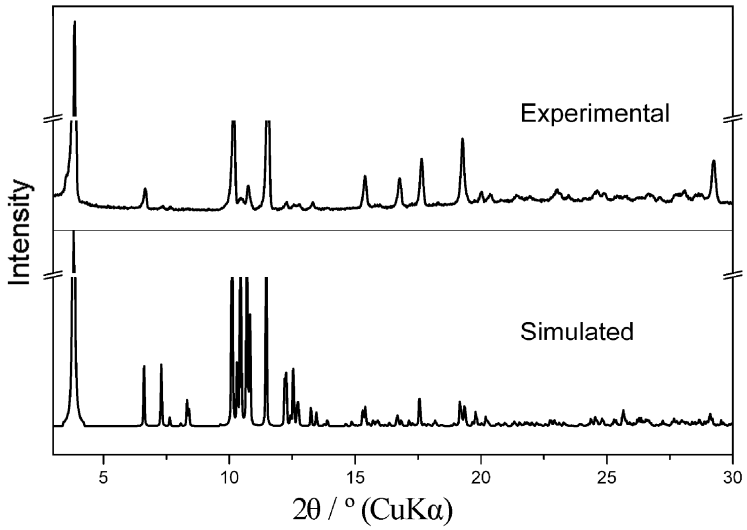

Figure S1 The experimental and simulated X-ray powder diffraction patterns for JLG-12
(Note: The simulated XRD pattern is calculated from the structure model without extra-framework atoms. The discrepancy between the experimental and simulated patterns comes from the ignoring of the contribution of extra-framework species)

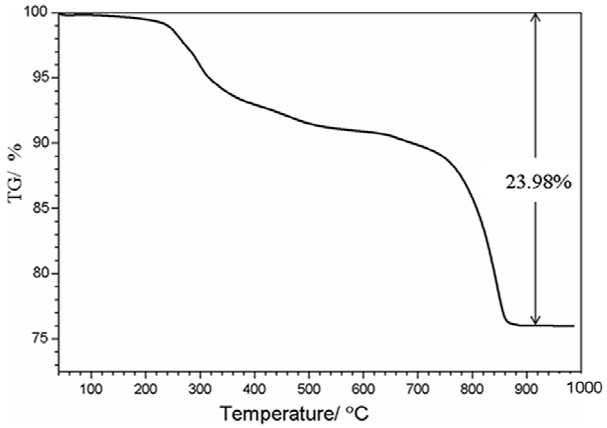

Figure S2 Thermogravimetric (TG) curves of JLG-12 in air. The TG analysis was performed on A Perkin-Elmer TGA 7 unit, with a heating rate of 10°C/min.

(Note: The framework collapses upon heating at 220°C with the decomposition of the occluded template molecules.)

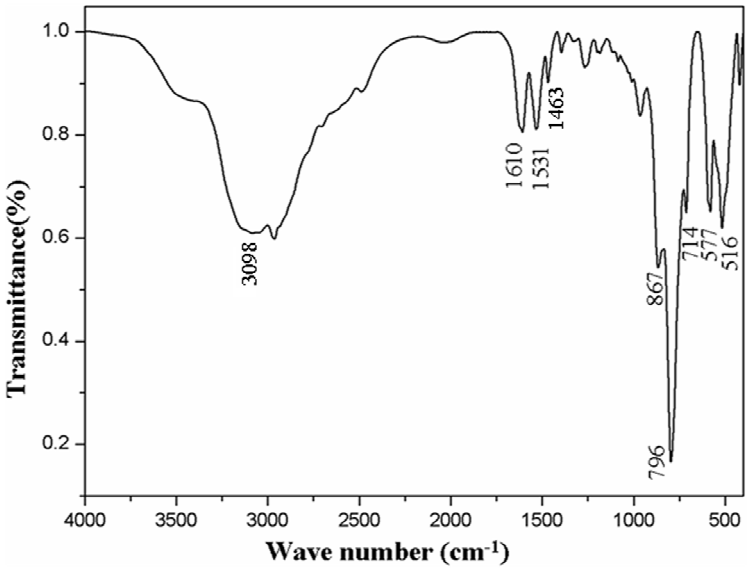

Figure S3 Infrared spectrum of JLG-12. IR (KBr, cm^{-1}): 3098 (OH); 1610, 1531 and 1463 (RNH_3^+); 867, 714, 577 and 516 (Ge-O); 796 (Ge-F).

References:

(1) Beitone, L.; Loiseau, T.; Férey, G. *Inorg. Chem.* **2002**, *41*, 3962.

(2) Conradsson, T.; Zou, X. D.; Dadachov, M. S. *Inorg. Chem.* **2000**, *39*, 1716.

(2) Paques-Ledent, M. Th. *Spectrochim. Acta* **1976**, *32A*, 383.

(3) Tarte, P.; Pottier, M. J.; Proces, A. M. *Spectrochim. Acta* **1973**, *29A*, 1017.