Supporting Information

Table S1 Binding and interstitial separation energies of stable $2M^{\bullet}_{Cd}:O''_i$ clusters and dopant radii, potential references given in column 1.

Cluster	Radius (Å)	$E_{Binding}$ (eV)	$E_{Separation}$ (eV)
$2Sc^{\bullet}_{Cd}:O''_i$ [18]	0.75	-2.55	2.83
$2Y^{\bullet}_{Cd}:O''_i$ † [19]	0.90	-2.21	2.49
$2Nd^{\bullet}_{Cd}:O''_i$ [18]	0.98	-2.24	2.64
$2Pr^{\bullet}_{Cd}:O''_i$ [18]	0.99	-2.29	2.69
$2La^{\bullet}_{Cd}:O''_i$ [19]	1.03	-2.33	2.74

† Note a second, similarly structured, $2Y^{\bullet}_{Cd}:O''_i$ cluster also identified (-2.16 eV).

Table S2 Diffusion coefficients (D) calculated for oxygen in $Cd_{1.9}Y_{0.1}GeO_{4.05}$ and $Cd_{1.9}Nd_{0.1}GeO_{4.05}$.

Temperature (K)	D ($cm^2\ s^{-1}$)	
	$Cd_{1.9}Y_{0.1}GeO_{4.05}$	$Cd_{1.9}Nd_{0.1}GeO_{4.05}$
873†	2.36×10^{-10}	6.44×10^{-10}
1073	2.35×10^{-9}	3.43×10^{-9}
1273	1.03×10^{-8}	8.04×10^{-9}
1473	3.50×10^{-8}	2.34×10^{-8}

† Extrapolated from high temperature data.

Table S3 Axial diffusion coefficients for oxygen in $Cd_{1.9}Y_{0.1}GeO_{4.05}$ at 1473 K.

Axis	D ($cm^2\ s^{-1}$)	Ratio
a	1.90×0^{-8}	4
b	4.89×0^{-9}	1
c	1.15×0^{-8}	2

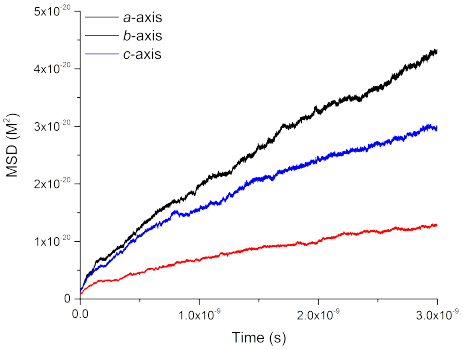

Fig. S1 Axial MSDs for oxide ions in $Cd_{1.9}Y_{0.1}GeO_{4.05}$ at 1473 K.