

Supporting Information

High Performance Optical Temperature Sensing via Selectively Partitioning Cr⁴⁺ in the Residual SiO₂-rich Phase of Glass-ceramics

Zhanwen Zhang,^{a, †} Xinfang Li,^a Changjiang Wang,^b Xvsheng Qiao^b

a. Civil Aviation Flight University of China Luoyang College, Luoyang 471001, China

*b. State Key Laboratory of Silicon Materials & School of Materials Science and Engineering,
Zhejiang University, Hangzhou 310027, China.*

† Corresponding author. E-mail: ziyu4983@sina.com; Tel.: +86-379-62328265.

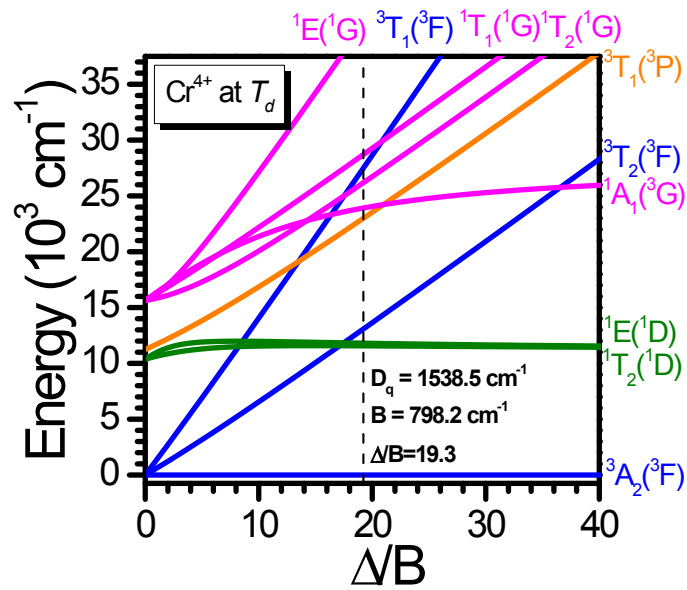


Figure S1 Tanabe-Sugano diagrams of Cr^{4+} ions in a tetrahedral crystal field ($\Delta/B \approx 19.3$, $B=798.2 \text{ cm}^{-1}$)

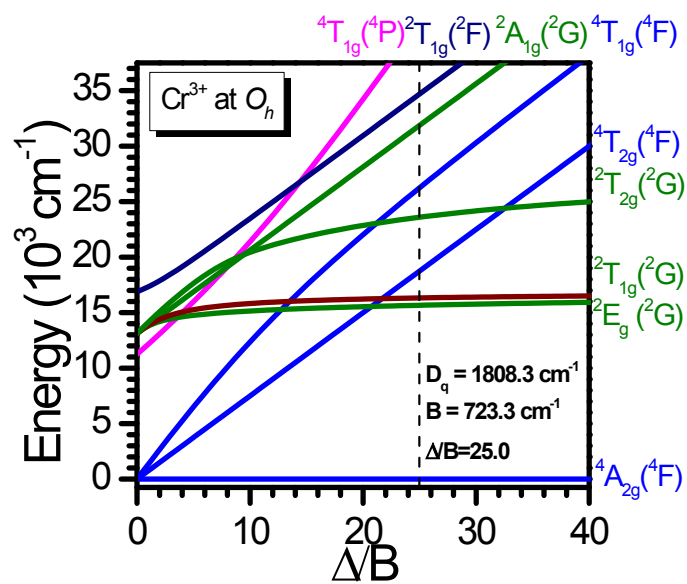


Figure S2 Tanabe-Sugano diagrams of Cr^{3+} ions in an octahedral crystal field ($\Delta/B \approx 25.0$, $B= 723.3 \text{ cm}^{-1}$).

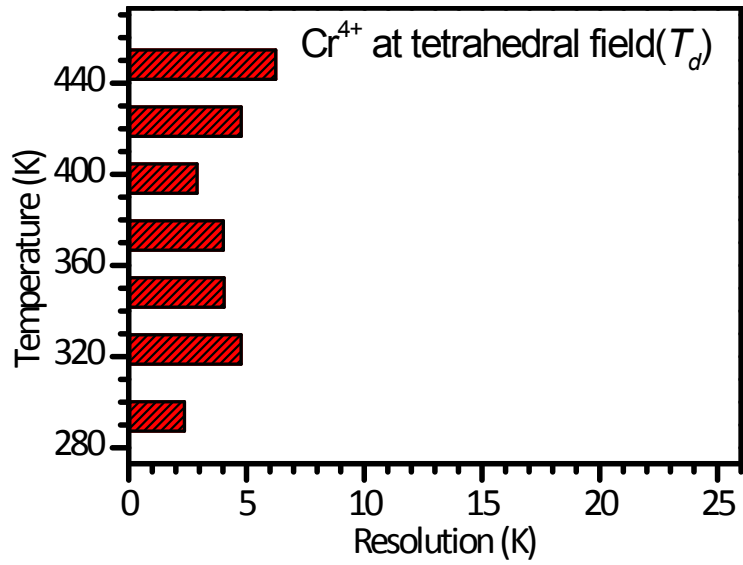


Figure S3 Thermal resolution of Cr⁴⁺ temperature sensing in the investigated glass-ceramics.

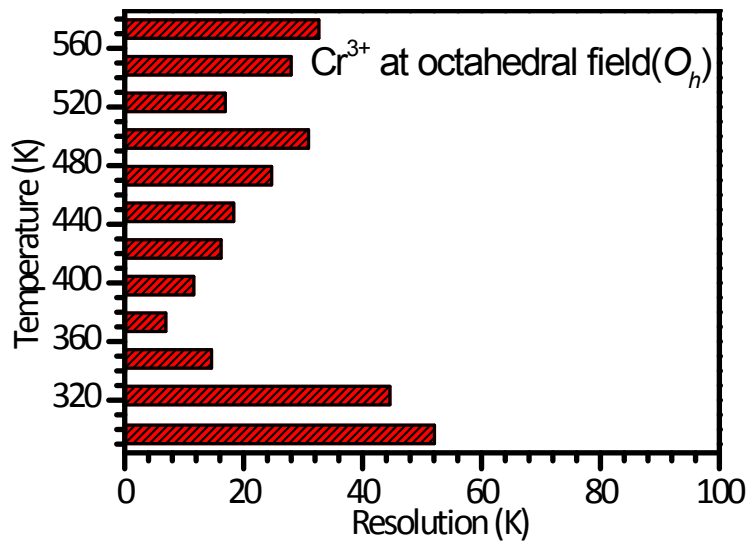


Figure S4 Thermal resolution of Cr³⁺ temperature sensing in the investigated glass-ceramics.