

Supplementary Information:

**Anisotropic Raman spectral analysis and laser output based on large-sized Scheelite bismuth molybdate tungstate mixed crystals**

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**Figure S1.** EDS composition analysis based on the as-grown single crystal of BMO.

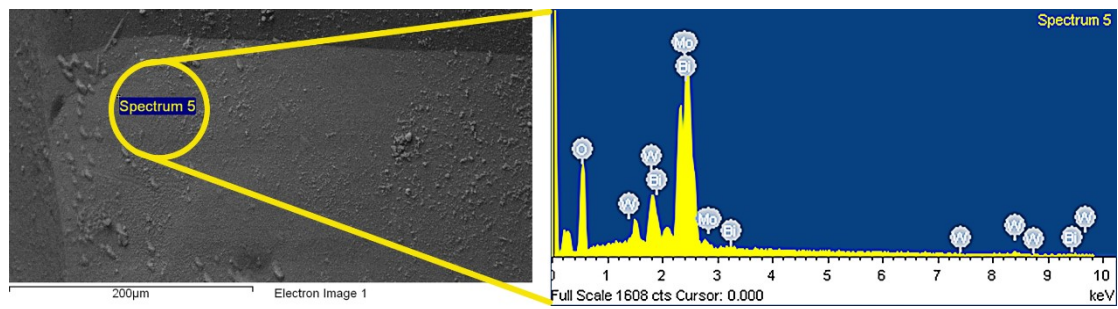
**Figure S2.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical X principal axis. (a)-(d) represent the polarized Raman spectra under the X(YY)X, X(ZZ)X, X(YZ)X, and X(ZY)X configurations, respectively.

**Figure S3.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical Y principal axis. (a)-(d) represent the polarized Raman spectra under the Y(XX)Y, Y(ZZ)Y, Y(XZ)Y, and Y(ZX)Y configurations, respectively.

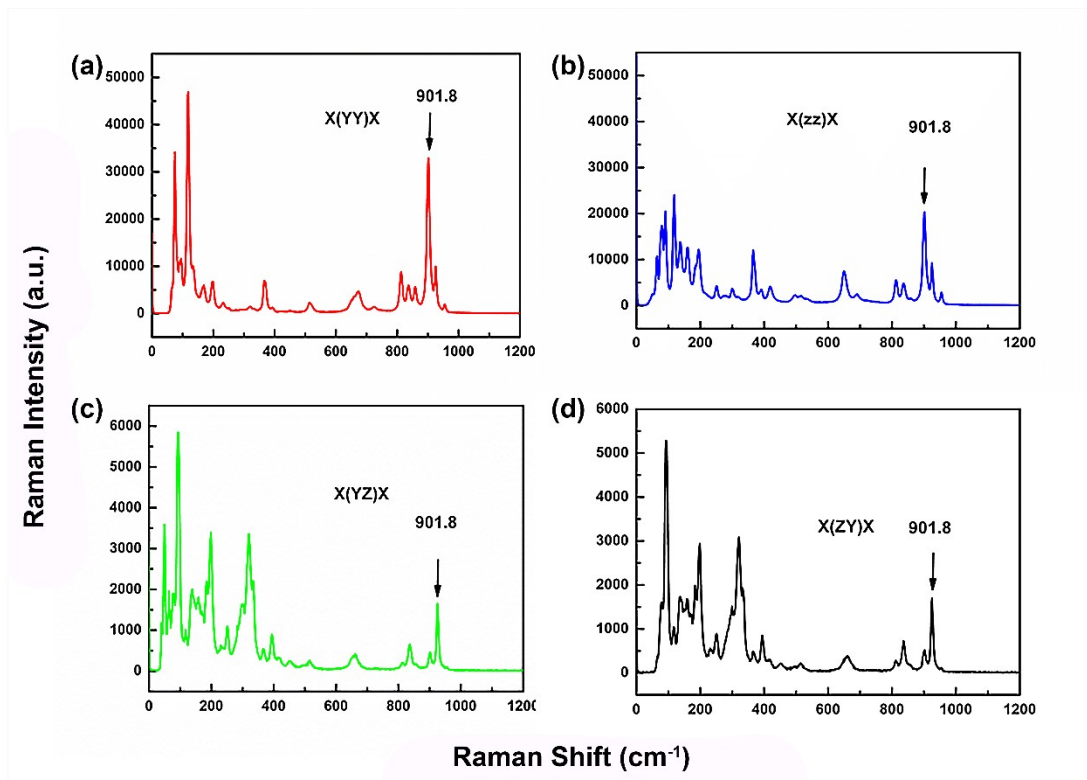
**Figure S4.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical Z principal axis. (a)-(d) represent the polarized Raman spectra under the Z(XX)Z, Z(YY)Z, Z(XY)Z, and Z(YX)Z configurations, respectively.

**Table S1.** EDS analysis results of the BMO mixed crystals

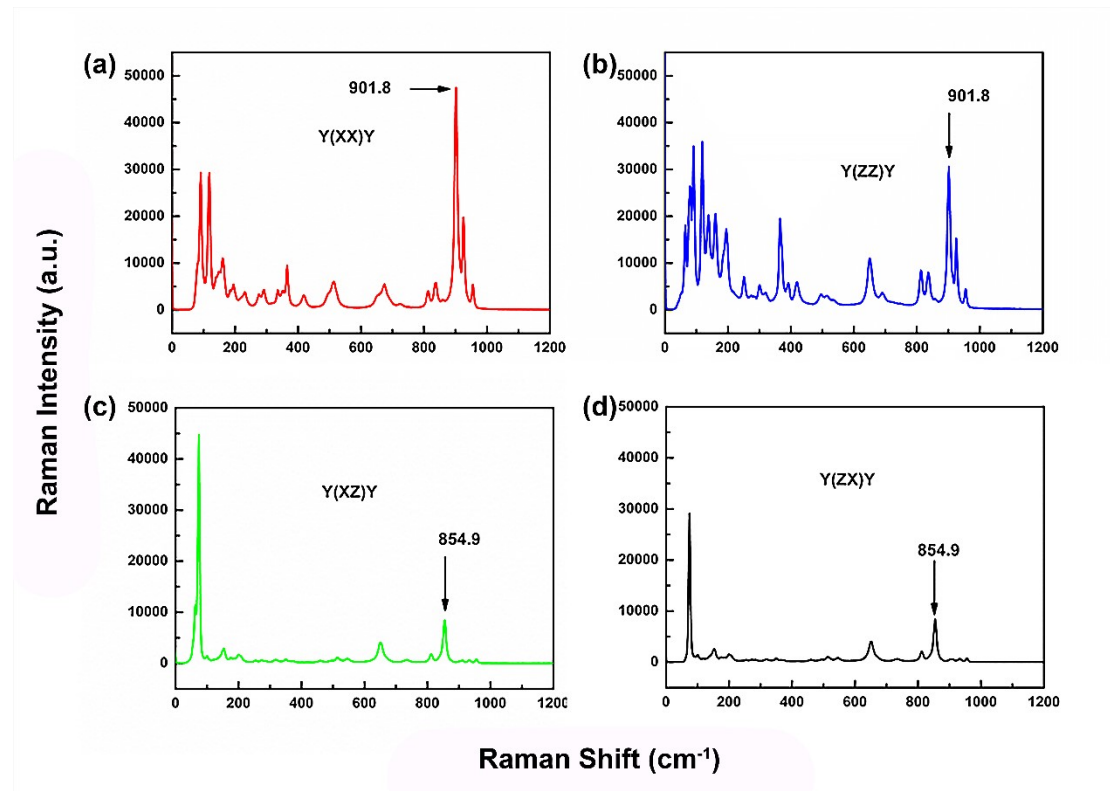
**Table S2.** XRF analysis results of the BMO mixed crystals.



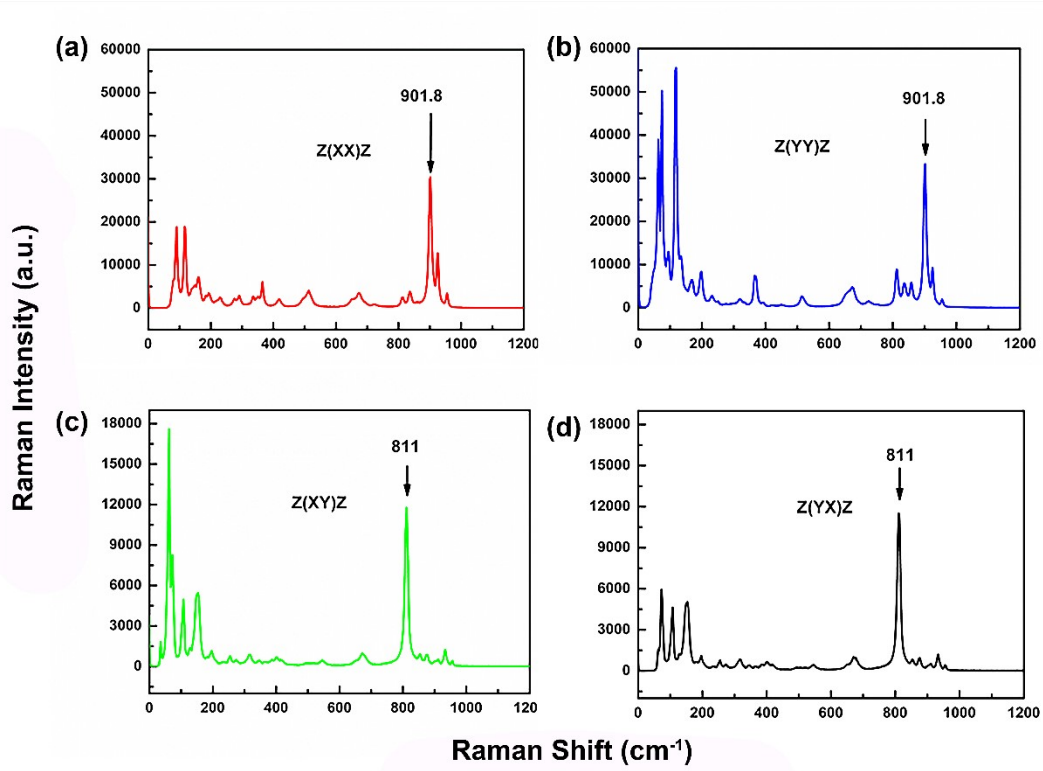
**Figure S1.** EDS composition analysis based on the as-grown single crystal of BMO.



**Figure S2.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical X principal axis. (a)-(d) represent the polarized Raman spectra under the X(YY)X, X(ZZ)X, X(YZ)X, and X(ZY)X configurations, respectively.



**Figure S3.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical Y principal axis. (a)-(d) represent the polarized Raman spectra under the Y(XX)Y, Y(ZZ)Y, Y(XZ)Y, and Y(ZX)Y configurations, respectively.



**Figure S4.** Polarized spontaneous Raman spectra of BMO crystal under different geometric configurations with the incident light propagating along the optical Z principal axis. (a)-(d) represent the polarized Raman spectra under the Z(XX)Z, Z(YY)Z, Z(XY)Z, and Z(YX)Z configurations, respectively.

**Table S1.** EDS analysis results of the BMO mixed crystals

<b>Element</b>	<b>Weight%</b>	<b>Atomic%</b>
Bi	37.00	8.29
Mo	28.03	13.68
W	9.09	2.32
O	25.87	75.71
Total	100	100

**Table S2.** XRF analysis results of the BMO mixed crystals.

<b>Element</b>	<b>Weight%</b>	<b>Atomic%</b>
Bi	56.6	40.5
Mo	32.7	50.9
W	10.6	8.6
Total	100	100