

## Supporting Information

### Mechanical and optical behaviors: strain synergy effects in high temperature phase oxide of lead

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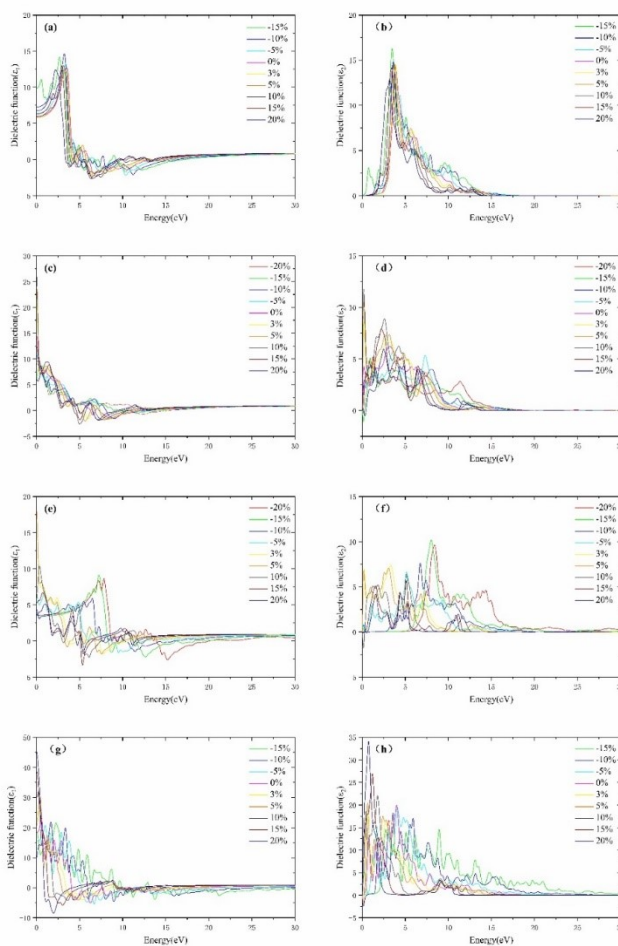


Fig.S1. Real  $\epsilon_1(\omega)$  (a) and imaginary  $\epsilon_2(\omega)$  (b) components of the dielectric function of the  $\alpha$ -PbO under strain in the range of -15%-+20%; Real  $\epsilon_1(\omega)$  (c) and imaginary  $\epsilon_2(\omega)$  (d) components of the dielectric function of the  $\alpha$ -PbO<sub>2</sub> under strain in the range of -20%-+20%; Real  $\epsilon_1(\omega)$  (e) and imaginary  $\epsilon_2(\omega)$  (f) components of the dielectric function of the  $\beta$ -PbO<sub>2</sub> under strain in the range of -20%-+20%; Real  $\epsilon_1(\omega)$  (g) and imaginary  $\epsilon_2(\omega)$  (h) components of the dielectric function of the CsCl-PbO under strain in the range of -15%-+20%.