Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics. This journal is © the Owner Societies 2024

## Supplementary Information for

Chemical properties of superatomic Li<sub>3</sub>O clusters from density functional

theory perspective: formation of chloride and adsorption behavior on

## graphynes

Xiao Wang<sup>1</sup>, Meng Zhang<sup>1</sup>, Wei Cao<sup>2</sup>

<sup>1</sup> School of Physics, East China University of Science and Technology, Shanghai 200237, China.

<sup>2</sup> Nano and Molecular Systems Research Unit, University of Oulu, FIN-90014, Finland.

## Correspondence:

Meng Zhang, Email: <a href="mzhang@ecust.edu.cn">mzhang@ecust.edu.cn</a>

Wei Cao, Email: wei.cao@oulu.fi

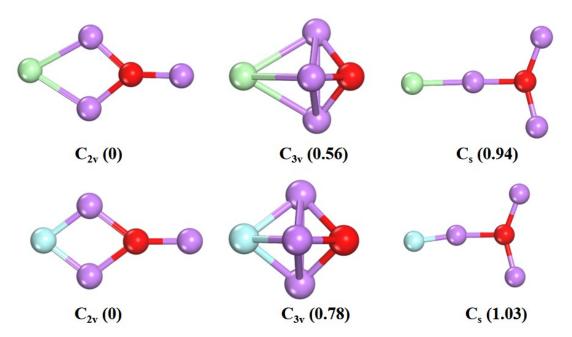


Figure S1. The lowest energy structures and the metastable isomers of the Li<sub>3</sub>O(Cl) and Li<sub>3</sub>O(F) halides. Numbers in the brackets are the energies (in eV) of the clusters relative to the lowest energy energies. Green, blue and red spheres represent chlorine, fluorine and oxygen atoms, respectively. Space groups were determined with a tolerance of 0.1 Å.