

## Stability of subnanometer MoS wires under realistic environment

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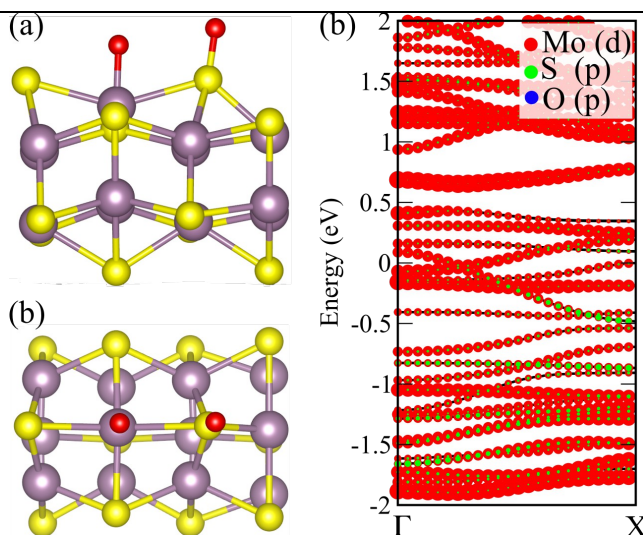
### Abstract

We carried out first-principles density functional theory calculations of hydrogen and oxygen adsorption and diffusion on subnanometer MoS nanowires. The nanowires are robust against adsorption of hydrogen. On the other hand, interaction with oxygen shows that the nanowires can oxidize with a small barrier. Our results open the path for understanding the behavior of MoS nanowires under realistic environment.

### References

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### Figures



**Figure 1:** (a) and (b) Relaxed geometry and (c) electronic band structure of an oxygen molecule on MoS nanowires.