**Mismatched Layered Materials**

- consist of 2 alternating layers: a rocksalt and a transition metal dichalcogenide (TMD)
- defined by the formula $\text{BiX} + \text{NbY}_2$, where X is S, Se, or Te and Y is S, Se, creating the following materials:
  - $\text{BiS} + \text{NbS}_2$,
  - $\text{BiSe} + \text{NbS}_2$,
  - $\text{BiTe} + \text{NbS}_2$,
  - $\text{BiS} + \text{NbSe}_2$,
  - $\text{BiSe} + \text{NbSe}_2$,
  - $\text{BiTe} + \text{NbSe}_2$.

**Conclusions:**

The density of states calculations indicate that $\text{BiTe} + \text{NbSe}_2$ has the highest density of states at the Fermi level for this particular family of materials. Furthermore, this material is suspected to have the greatest $T_c$ enhancement. Since $T_c$ for monolayer $\text{NbSe}_2$ is 3.1 K and the calculated enhancement is a factor of 8.88, we hypothesize that $T_c$ for $\text{BiTe} + \text{NbSe}_2$ could be as high as 27 K.

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