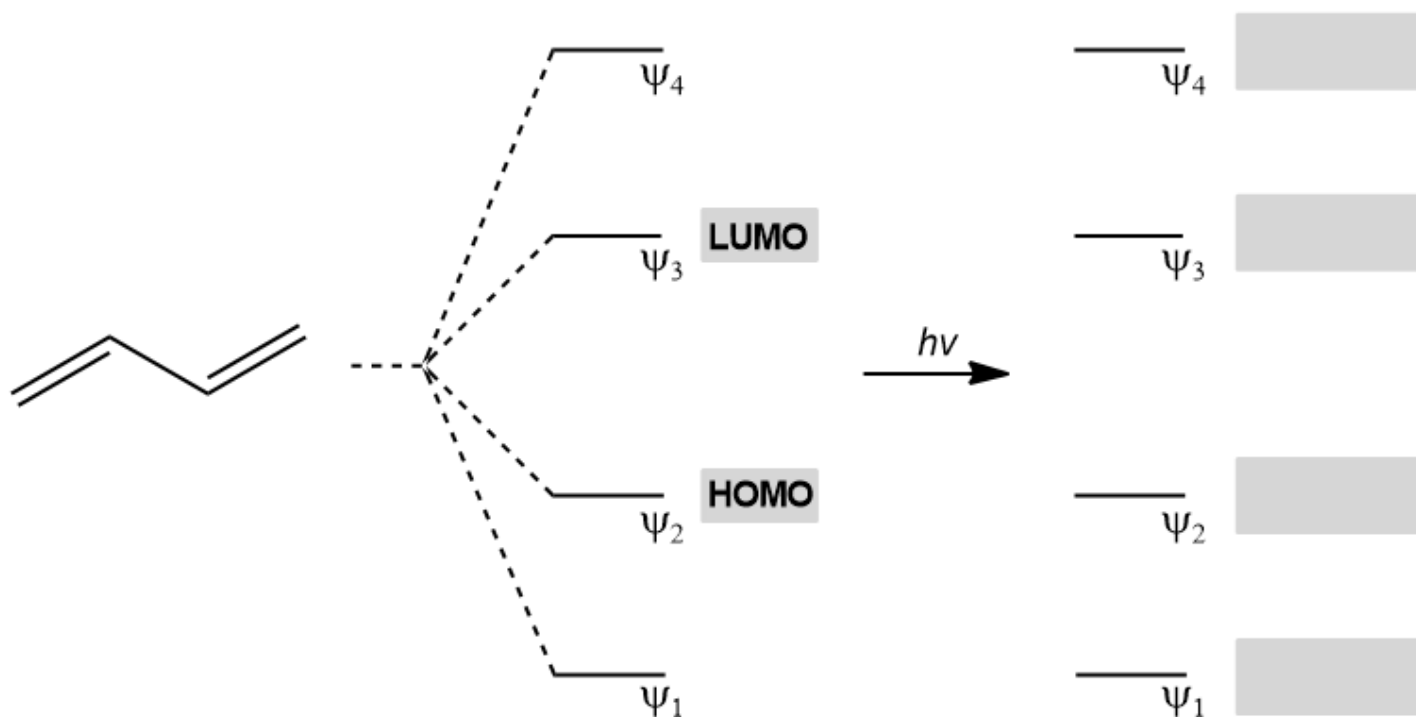


CONCEPT: ORBITAL DIAGRAMS: EXCITED STATES

- Conjugated polyenes have the ability to absorb light energy and kick electrons up to a higher energy state.
 - When this happens, the identity of HOMO/LUMO orbitals change, impacting their reactivity (more later).

EXAMPLE: 1,3-butadiene is irradiated with photons, exciting an electron up to a higher energy molecular orbital. Predict the identity of the HOMO and LUMO orbitals after irradiation.



PRACTICE: 4-Methylbenzylidene camphor (4-MBC) is used by the cosmetic industry for its ability to protect the skin against UV-B radiation. Circle the part of the molecule that you theorize is responsible for its effects on UV light.

