OCR (B) Chemistry A-Level

CD5 - Energy and Matter

Flashcards

Why do some organic molecules have colour?

Why do some organic molecules have colour?

- When a substance absorbs light energy, the electrons become excited and are raised to a higher energy level from their ground states.
- The difference in energy between the higher energy level and the ground state is equal to the energy absorbed.
- For coloured substances, the corresponding wavelength/frequency for this energy will be found in the visible region (using $E=hf$).

What is the relationship between delocalisation and energy absorbed?

What is the relationship between delocalisation and energy absorbed?

- As the amount of delocalisation in a molecule increases, the maximum wavelength absorbed increases.
- Therefore energies absorbed are smaller. ($E = hf$) ($c = f\lambda$)
- Therefore as the amount of delocalisation increases, the difference in energy between (bonding and non-bonding) orbitals must be smaller.