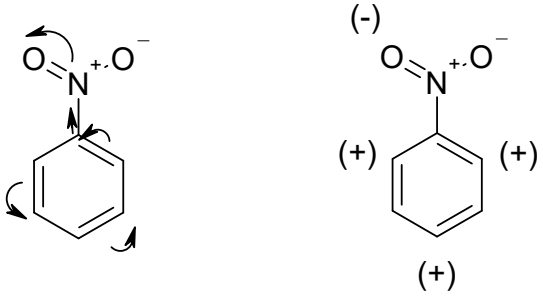
Answer on Question #72513, Chemistry / Organic Chemistry

Question:

Write down the mechanism of electrophilic substitution reaction in nitrobenzene.

Answer:

First of all we must understand that NO_2-group in the nitrobenzene has negative inductive and negative mesomeric effect. Therefore it deactivates the benzene ring for electrophilic substitution reactions. Ortho- and para- positions of the ring are more deactivated then meta- position. See below:



Therefore the electrophile attacks meta- position and form the intermediate sigma-complex which gives the product after losing the proton.