

## Answer on Question #79524 – Chemistry – Inorganic Chemistry

Compare the dipole moment of the following: O nitrophenol O dichlorobenzene O xylene  
According to me, o dichlorobenzene should have the highest dipole moment since the angle will be acute but in o nitrophenol it will be obtuse. And o xylene should have the least since the dipole strength would be lesser as compared to others but surprisingly the order is: O nitrophenol (3.01D) > o dichlorobenzene (2.67D) > o xylene (0.64D) How?(data collected from internet)

### **Solution:**

Because dipole is pointed from less electronegative atom to more electronegative. So due to NO<sub>2</sub>'s -R effect it will be from carbon to nitrogen, but due to +R effect of phenol it will be from oxygen to carbon.

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