

## Answer on Question #66798 - Chemistry - Inorganic Chemistry

Question:

write molecular orbital configuration for following molecular ions . comment on paramagnetic properties of these ions -

1 . N<sub>2</sub><sup>+</sup> and

2 . N<sub>2</sub><sup>2-</sup>

**Solution:**

N<sub>2</sub><sup>+</sup> (13 e<sup>-</sup>):  $\sigma^2 1s^{*2} 1s\sigma^2 2s\sigma^{*2} 2s\pi^2 2p\pi^2 2p\sigma^1 2p$

N<sub>2</sub><sup>2-</sup> (16 e<sup>-</sup>):  $\sigma^2 1s^{*2} 1s\sigma^2 2s\sigma^{*2} 2s\pi^2 2p\pi^2 2p\sigma^2 2p\pi^{*1} 2p\pi^{*1} 2p$

These ions will have paramagnetic properties. Paramagnets are substances that are magnetized in an external magnetic field in the direction of an external magnetic field and have a positive magnetic susceptibility. The paramagnetic properties of ions are due to the presence of unpaired electrons. N<sub>2</sub><sup>+</sup> and N<sub>2</sub><sup>2-</sup> on the orbital have unpaired electrons, that is, these ions have paramagnetic properties.