

Название презентации

Now the end carbon has a single unpaired electron. What do we do with it? Before the bond broke, the end carbon was tetrahedral (sp^3 hybridized). We might think that it would still be in an sp^3 orbital. However, since an sp^3 orbital cannot overlap efficiently to form a bond, the single electron would then have to be localized on the end carbon atom. If the end carbon atom becomes trigonal (sp^2 hybridized), the single electron could be in a p orbital and this could overlap and combine with the π bond. This would mean that the radical cation molecule in the same orbital that contained the cation.

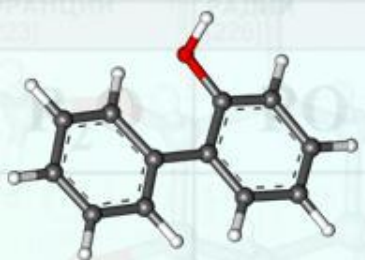
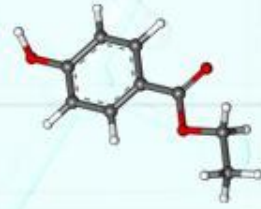
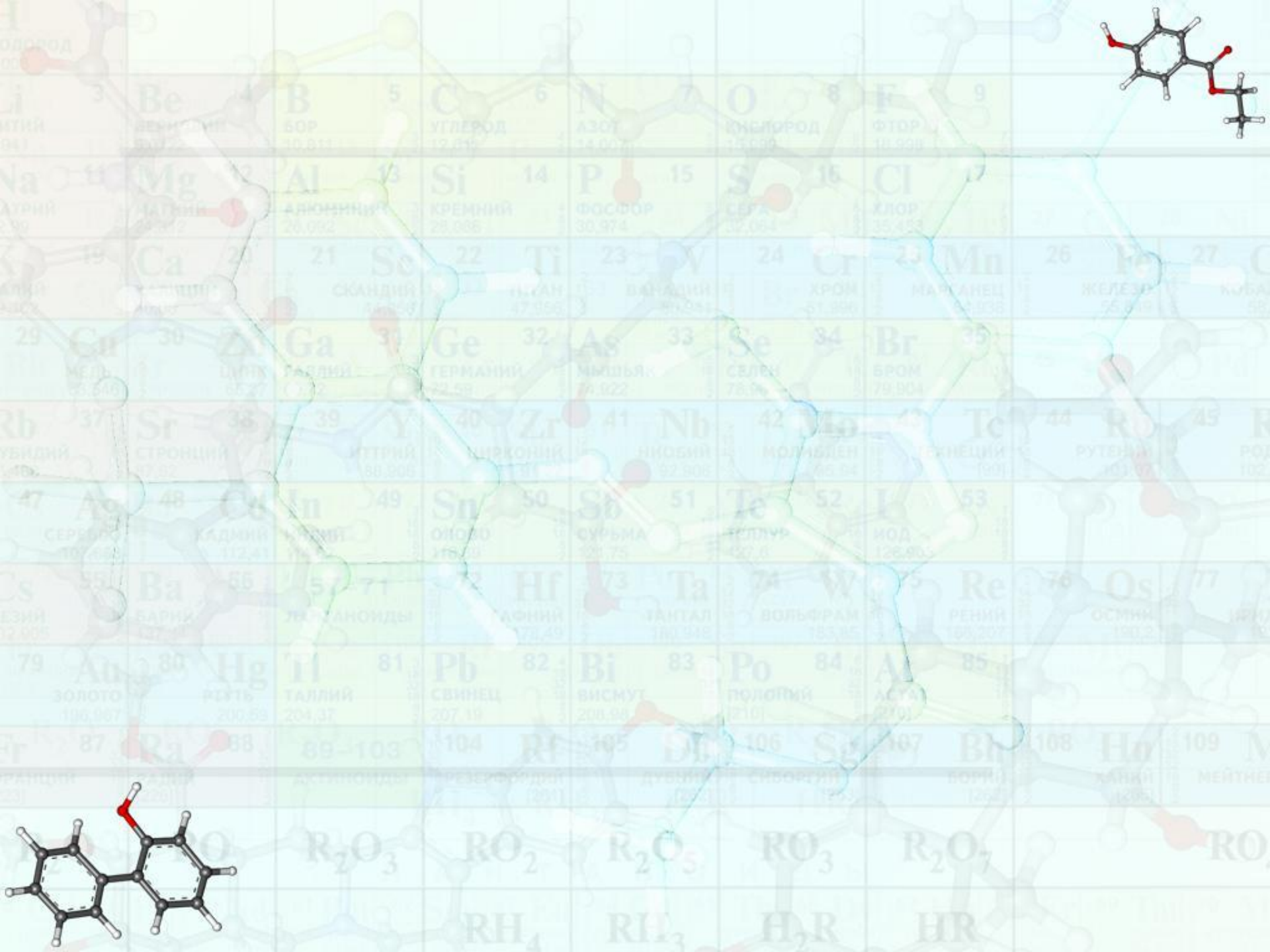
So once again we have three orbitals to share the same energy levels. In fact, the molecular orbital energy level diagram for this compound is almost the same as the one for the allyl cation: the only difference is the number of electrons in the π system. Whereas in the allyl cation π system we only had two electrons, here we have three (two from the π bond plus the single one). Where does this extra electron go? Answer: in the next lowest molecular orbital—the nonbonding molecular orbital.

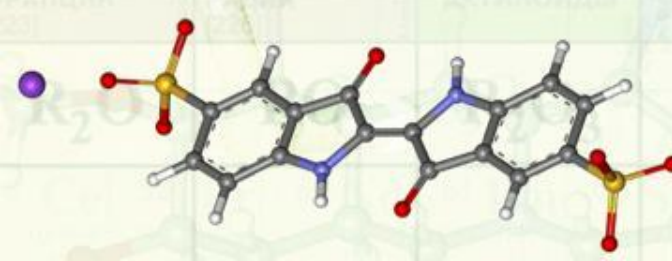
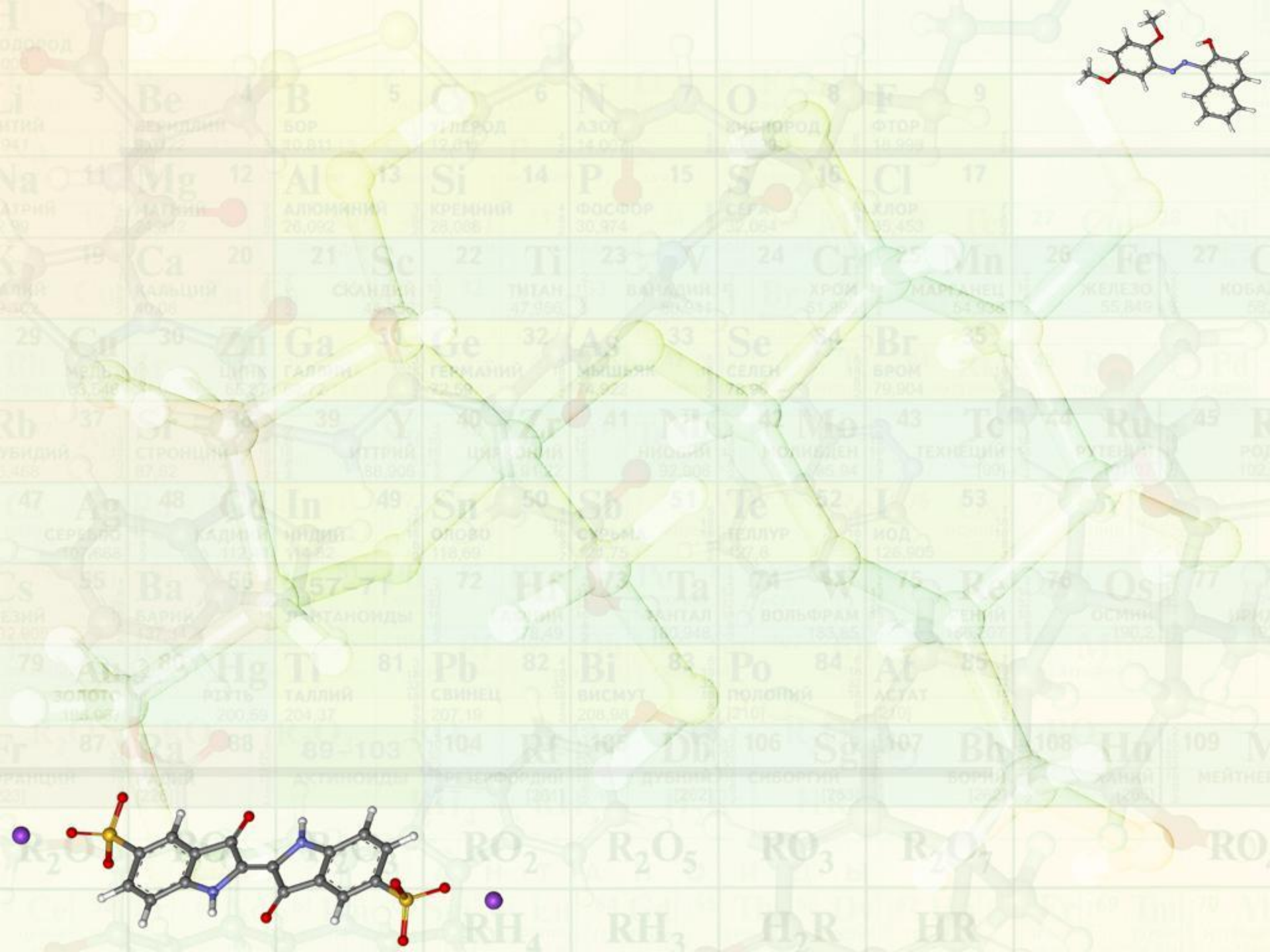
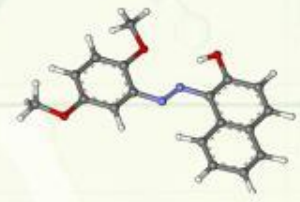


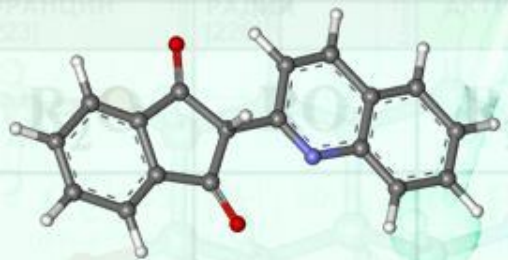
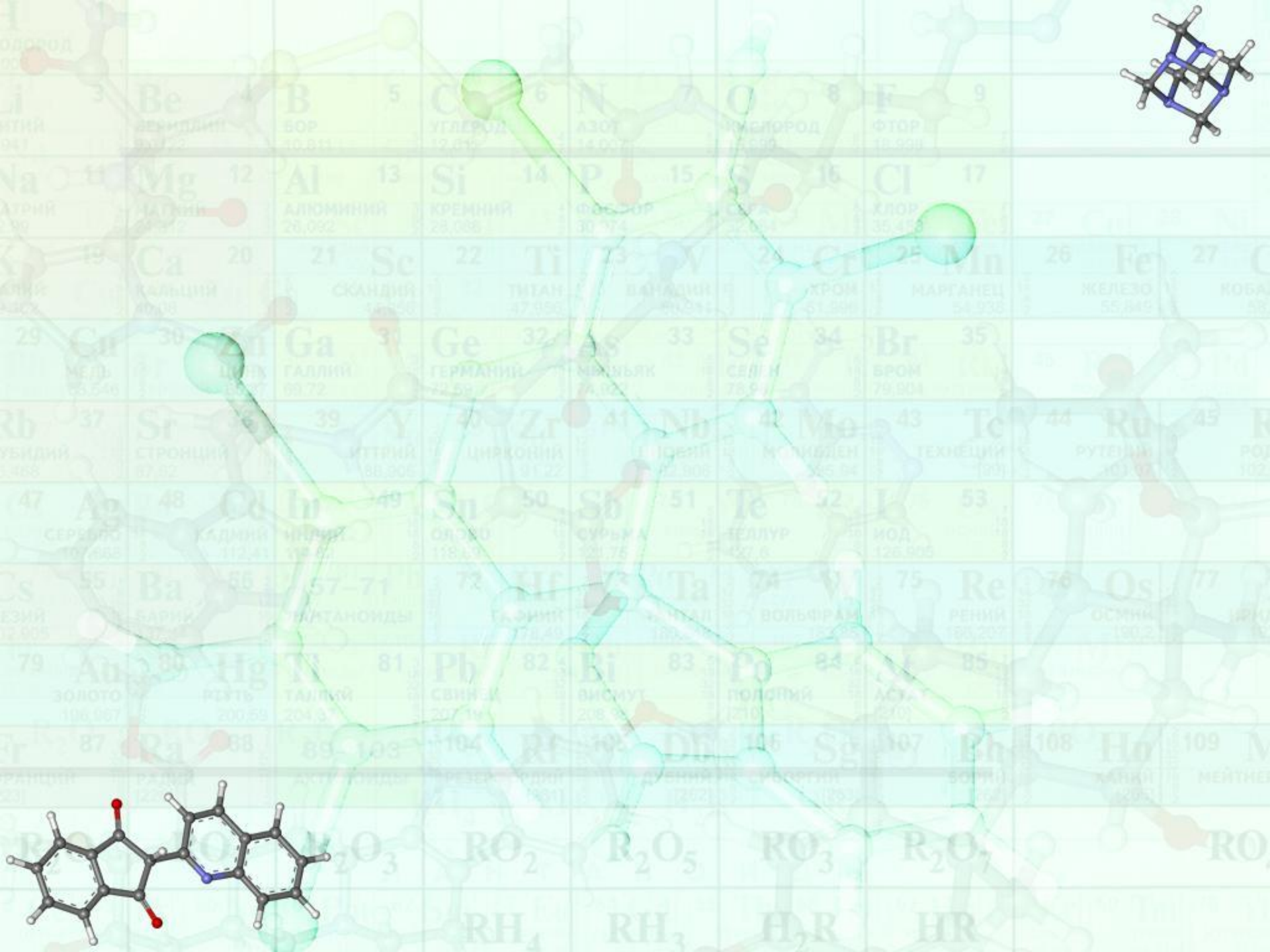
antibonding molecular orbital higher in energy than a p orbital

nonbonding molecular orbital same energy as a p orbital

this MO now has one electron in it. It is known as the Singly Occupied Molecular Orbital (SOMO) of the molecule.







1 H Водород 1.008
2 He Гелий 4.003
3 Li Литий 6.941
4 Be Бериллий 9.012
5 B Бор 10.811
6 C Углерод 12.011
7 N Азот 14.007
8 O Кислород 15.999
9 F Фтор 18.998
10 Ne Неон 20.180
11 Na Натрий 22.990
12 Mg Магний 24.305
13 Al Алюминий 26.982
14 Si Кремний 28.086
15 P Фосфор 30.974
16 S Сера 32.065
17 Cl Хлор 35.453
18 Ar Аргон 39.948
19 Ca Кальций 40.078
20 Sc Скандий 44.956
21 Ti Титан 47.883
22 V Ванадий 50.942
23 Cr Хром 51.996
24 Mn Марганец 54.938
25 Fe Железо 55.845
26 Co Кобальт 58.933
27 Ni Никель 58.693
28 Cu Медь 63.546
29 Zn Цинк 65.38
30 Ga Галлий 69.723
31 Ge Германий 72.63
32 As Мышьяк 74.922
33 Se Селен 78.96
34 Br Бром 79.904
35 Kr Криптон 83.798
36 Rb Рубидий 85.468
37 Sr Стронций 87.62
38 Y Иттрий 88.906
39 Zr Цирконий 91.224
40 Nb Ниобий 92.906
41 Mo Молибден 95.94
42 Tc Технеций 98
43 Ru Рутений 101.07
44 Rh Родий 102.905
45 Pd Палладий 106.367
46 Ag Серебро 107.868
47 Cd Кадмий 112.411
48 In Индий 114.818
49 Sn Олово 118.710
50 Sb Сурьма 121.757
51 Te Теллур 127.6
52 I Иод 126.905
53 Xe Ксенон 131.29
54 Ba Барий 137.327
55 La Лантаноиды
56 Ce Церий 140.12
57-71 Лантаноиды
72 Hf Гафний 178.49
73 Ta Тантал 180.948
74 W Вольфрам 183.84
75 Re Рений 186.207
76 Os Осмий 190.23
77 Ir Иридий 192.222
78 Pt Платина 195.084
79 Au Золото 196.967
80 Hg Ртуть 200.59
81 Tl Таллий 204.38
82 Pb Свинец 207.2
83 Bi Висмут 208.98
84 Po Полоний 209
85 At Астат 210
86 Rn Радон 222
87 Ra Радий 226
88 Ac Actиноиды
89-103 Actиноиды
104 Rf Рений 261
105 Db Дубний 262
106 Sg Штербгий 263
107 Bh Борий 264
108 Hs Хассий 265
109 Mt Мейтнерий 266

RO_3 RO_2 R_2O_5 RO_3 R_2O_7 RO_4
 RH_4 RH_3 H_2R HR

