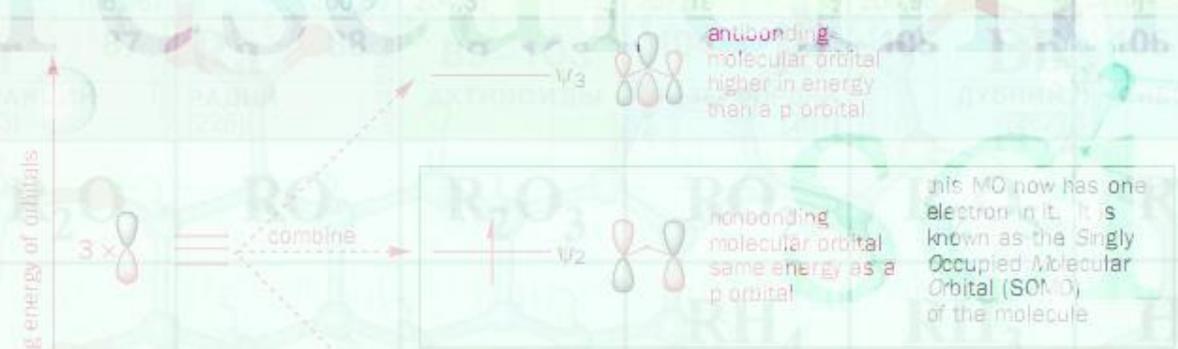


Название презентации

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 with a π 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.

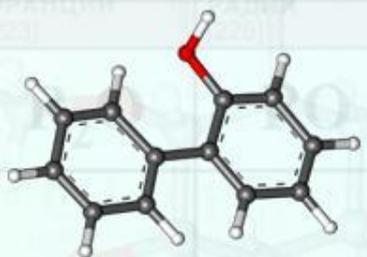
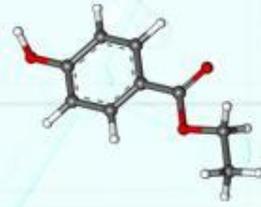
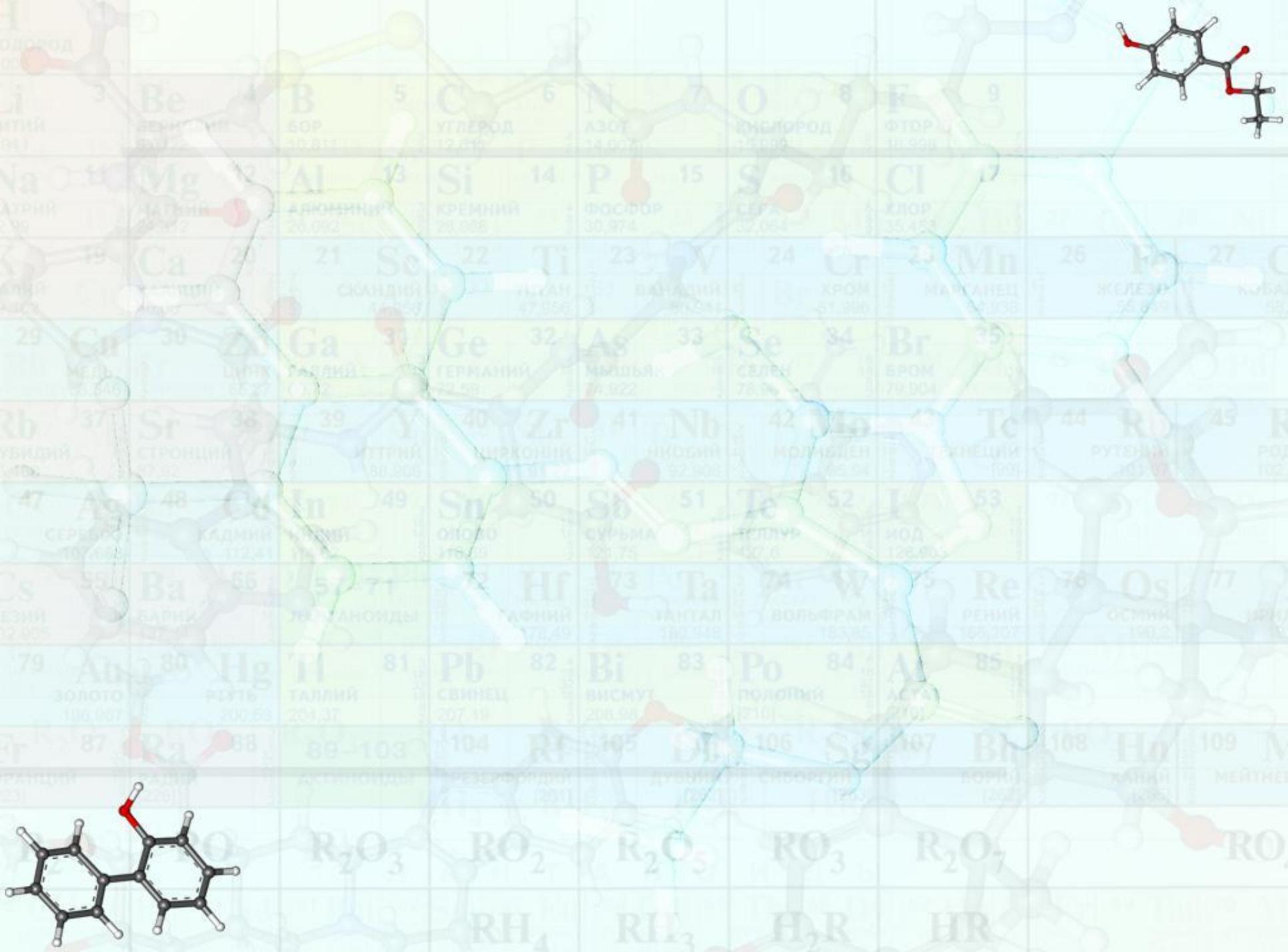
So once again we have three orbitals to share the same energy levels. In fact, the molecular orbital energy level diagram for this compound is almost the same as the one for the allyl cation: the only difference is the number of electrons in the π system. Whereas in the allyl cation π system we only 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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89-103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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7	9	10.81	12.01	14.01	16.00	18.99	20.18	22.99	24.31	26.98	28.09	30.97	32.06	35.45	39.95	40.08	44.96	47.88	50.94	52.00	55.85	58.93	63.55	68.93	72.64	74.92	78.97	82.02	84.96	87.62	91.22	92.91	95.94	98.91	101.07	102.91	106.42	108.91	112.41	114.82	118.71	121.76	124.61	127.61	131.29	132.91	137.33	138.91	140.91	143.91	147.07	150.92	153.92	157.05	160.93	164.93	168.93	172.91	176.93	180.95	184.94	188.91	192.92	196.97	200.97	204.38	207.2	210.84	214.82	218.07	221.03	225.02	229.03	232.04	236.04	239.05	243.05	247.07	251.08	255.10	259.10	263.11	267.12	271.13	275.13	279.14	283.15	287.15	291.16	295.16	299.17	303.17	307.17	311.18	315.18	319.19	323.19	327.20	331.20	335.21	339.21	343.22	347.22	351.23	355.23	359.24	363.24	367.25	371.25	375.26	379.26	383.27	387.27	391.28	395.28	399.29	403.29	407.30	411.30	415.31	419.31	423.32	427.32	431.33	435.33	439.34	443.34	447.35	451.35	455.36	459.36	463.37	467.37	471.38	475.38	479.39	483.40	487.40	491.41	495.41	499.42	503.42	507.43	511.43	515.44	519.44	523.45	527.45	531.46	535.46	539.47	543.47	547.48	551.48	555.49	559.49	563.50	567.50	571.51	575.51	579.52	583.52	587.53	591.53	595.54	599.54	603.55	607.55	611.56	615.56	619.57	623.57	627.58	631.58	635.59	639.59	643.60	647.60	651.61	655.61	659.62	663.62	667.63	671.63	675.64	679.64	683.65	687.65	691.66	695.66	699.67	703.67	707.68	711.68	715.69	719.69	723.70	727.70	731.71	735.71	739.72	743.72	747.73	751.73	755.74	759.74	763.75	767.75	771.76	775.76	779.77	783.78	787.78	791.79	795.79	799.80	803.80	807.81	811.81	815.82	819.82	823.83	827.83	831.84	835.84	839.85	843.85	847.86	851.86	855.87	859.87	863.88	867.88	871.89	875.89	879.90	883.90	887.91	891.91	895.92	899.92	903.93	907.93	911.94	915.94	919.95	923.95	927.96	931.96	935.97	939.97	943.98	947.98	951.99	955.99	959.100	963.100	967.101	971.101	975.102	979.102	983.103	987.103	991.104	995.104	999.105	1003.105	1007.106	1011.106	1015.107	1019.107	1023.108	1027.108	1031.109	1035.109	1039.110	1043.110	1047.111	1051.111	1055.112	1059.112	1063.113	1067.113	1071.114	1075.114	1079.115	1083.115	1087.116	1091.116	1095.117	1099.117	1103.118	1107.118	1111.119	1115.119	1119.120	1123.120	1127.121	1131.121	1135.122	1139.122	1143.123	1147.123	1151.124	1155.124	1159.125	1163.125	1167.126	1171.126	1175.127	1179.127	1183.128	1187.128	1191.129	1195.129	1199.130	1203.130	1207.131	1211.131	1215.132	1219.132	1223.133	1227.133	1231.134	1235.134	1239.135	1243.135	1247.136	1251.136	1255.137	1259.137	1263.138	1267.138	1271.139	1275.139	1279.140	1283.140	1287.141	1291.141	1295.142	1299.142	1303.143	1307.143	1311.144	1315.144	1319.145	1323.145	1327.146	1331.146	1335.147	1339.147	1343.148	1347.148	1351.149	1355.149	1359.150	1363.150	1367.151	1371.151	1375.152	1379.152	1383.153	1387.153	1391.154	1395.154	1399.155	1403.155	1407.156	1411.156	1415.157	1419.157	1423.158	1427.158	1431.159	1435.159	1439.160	1443.160	1447.161	1451.161	1455.162	1459.162	1463.163	1467.163	1471.164	1475.164	1479.165	1483.165	1487.166	1491.166	1495.167	1499.167	1503.168	1507.168	1511.169	1515.169	1519.170	1523.170	1527.171	1531.171	1535.172	1539.172	1543.173	1547.173	1551.174	1555.174	1559.175	1563.175	1567.176	1571.176	1575.177	1579.177	1583.178	1587.178	1591.179	1595.179	1599.180	1603.180	1607.181	1611.181	1615.182	1619.182	1623.183	1627.183	1631.184	1635.184	1639.185	1643.185	1647.186	1651.186	1655.187	1659.187	1663.188	1667.188	1671.189	1675.189	1679.190	1683.190	1687.191	1691.191	1695.192	1699.192	1703.193	1707.193	1711.194	1715.194	1719.195	1723.195	1727.196	1731.196	1735.197	1739.197	1743.198	1747.198	1751.199	1755.199	1759.200	1763.200	1767.201	1771.201	1775.202	1779.202	1783.203	1787.203	1791.204	1795.204	1799.205	1803.205	1807.206	1811.206	1815.207	1819.207	1823.208	1827.208	1831.209	1835.209	1839.210	1843.210	1847.211	1851.211	1855.212	1859.212	1863.213	1867.213	1871.214	1875.214	1879.215	1883.215	1887.216	1891.216	1895.217	1899.217	1903.218	1907.218	1911.219	1915.219	1919.220	1923.220	1927.221	1931.221	1935.222	1939.222	1943.223	1947.223	1951.224	1955.224	1959.225	1963.225	1967.226	1971.226	1975.227	1979.227	1983.228	1987.228	1991.229	1995.229	1999.230	2003.230	2007.231	2011.231	2015.232	2019.232	2023.233	2027.233	2031.234	2035.234	2039.235	2043.235	2047.236	2051.236	2055.237	2059.237	2063.238	2067.238	2071.239	2075.239	2079.240	2083.240	2087.241	2091.241	2095.242	2099.242	2103.243	2107.243	2111.244	2115.244	2119.245	2123.245	2127.246	2131.246	2135.247	2139.247	2143.248	2147.248	2151.249	2155.249	2159.250	2163.250	2167.251	2171.251	2175.252	2179.252	2183.253	2187.253	2191.254	2195.254	2199.255	2203.255	2207.256	2211.256	2215.257	2219.257	2223.258	2227.258	2231.259	2235.259	2239.260	2243.260	2247.261	2251.261	2255.262	2259.262	2263.263	2267.263	2271.264	2275.264	2279.265	2283.265	2287.266	2291.266	2295.267	2299.267	2303.268	2307.268	2311.269	2315.269	2319.270	2323.270	2327.271	2331.271	2335.272	2339.272	2343.273	2347.273	2351.274	2355.274	2359.275	2363.275	2367.276	2371.276	2375.277	2379.277	2383.278	2387.278	2391.279	2395.279	2399.280	2403.280	2407.281	2411.281	2415.282	2419.282	2423.283	2427.283	2431.284	2435.284	2439.285	2443.285	2447.286	2451.286	2455.287	2459.287	2463.288	2467.288	2471.289	2475.289	2479.290	2483.290	2487.291	2491.291	2495.292	2499.292	2503.293	2507.293	2511.294	2515.294	2519.295	2523.295	2527.296	2531.296	2535.297	2539.297	2543.298	2547.298	2551.299	2555.299	2559.300	2563.300	2567.301	2571.301	2575.302	2579.302	2583.303	2587.303	2591.304	2595.304	2599.305	2603.305	2607.306	2611.306	2615.307	2619.307	2623.308	2627.308	2631.309	2635.309	2639.310	2643.310	2647.311	2651.311	2655.312	2659.312	2663.313	2667.313	2671.314	2675.314	2679.315	2683.315	2687.316	2691.316	2695.317	2699.317	2703.318	2707.318	2711.319	2715.319	2719.320	2723.320	2727.321	2731.321	2735.322	2739.322	2743.323	2747.323	2751.324	2755.324	2759.325	2763.325	2767.326	2771.326	2775.327	2779.327	2783.328	2787.328	2791.329	2795.329	2799.330	2803.330	2807.331	2811.331	2815.332	2819.332	2823.333	2827.333	2831.334	2835.334	2839.335	2843.335	2847.336	2851.336	2855.337	2859.337	2863.338	2867.338	2871.339	2875.339	2879.340	2883.340	2887.341	2891.341	2895.342	2899.342	2903.343	2907.343	2911.344	2915.344	2919.345	2923.345	2927.346	2931.346	2935.347	2939.347	2943.348	2947.348	2951.349	2955.349	2959.350	2963.350	2967.351	2971.351	2975.352	2979.352	2983.353	2987.353	2991.354	2995.354	2999.355	3003.355	3007.356	3011.356	3015.357	3019.357	3023.358	3027.358	3031.359	3035.359	3039.360	3043.360	3047.361	3051.361	3055.362	3059.362	3063.363	3067.363	3071.364	3075.364	3079.365	3083.365	3087.366	3091.366	3095.367	3099.367	3103.368	3107.368	3111.369	3115.369	3119.370	3123.370	3127.371	3131.371	3135.372	3139.372	3143.373	3147.373	3151.374	3155.374	3159.375	3163.375	3167.376	3171.376	3175.377	3179.377	3183.378	3187.378	3191.379	3195.379	3199.380	3203.380	3207.381	3211.381	3215.382	3219.382	3223.383	3227.383	3231.384	3235.384	3239.385	3243.385	3247.386	3251.386	3255.387	3259.387	3263.388	3267.388	3271.389	3275.389	3279.390	3283.390	3287.391	3291.391	3295.392	3299.392	3303.393	3307.393	3311.394	3315.394	3319.395	3323.395	3327.396	3331.396	3335.397	3339.397	3343.398	3347.398	3351.399	3355.399	3359.400	3363.400	3367.401	3371.401	3375.402	3379.402	3383.403	3387.403	3391.404	3395.404	3399.405	3403.405	3407.406	3411.406	3415.407	3419.407	3423.408	3427.408

