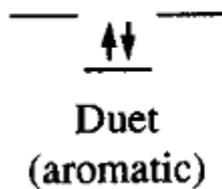
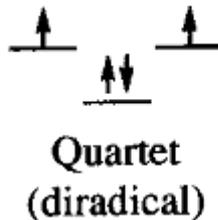


- Электронное строение

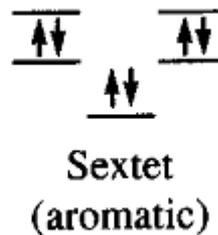
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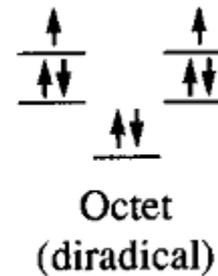
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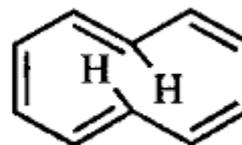
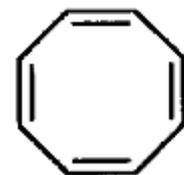
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S Z Var



S Z Varsadze's lectures



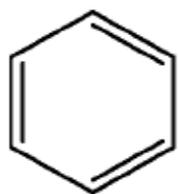
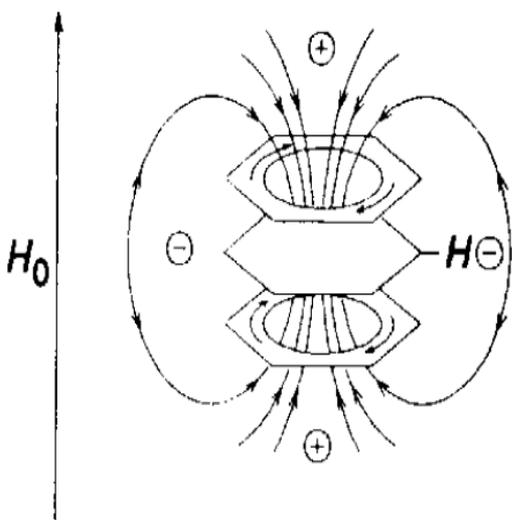
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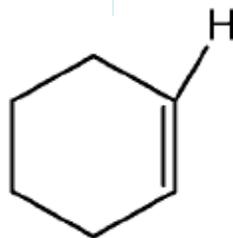
- Критерии ароматичности

1.4.1. Магнитные критерии: хим. сдвиги ^1H в спектрах ЯМР



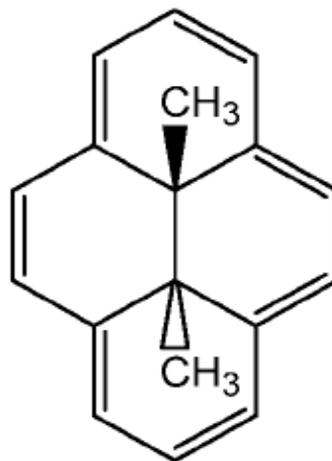
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NMR $\delta^1\text{H}$ 7.3
[ppm]



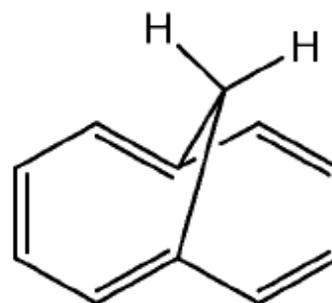
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5.6



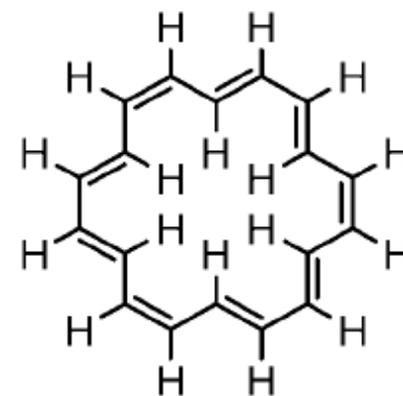
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Ring 8.14-8.67
 CH_3 -4.25



8

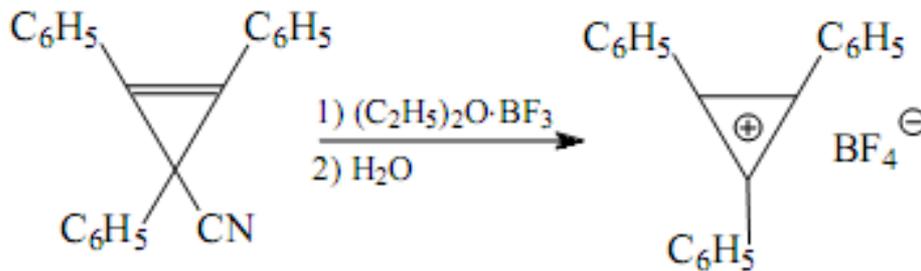
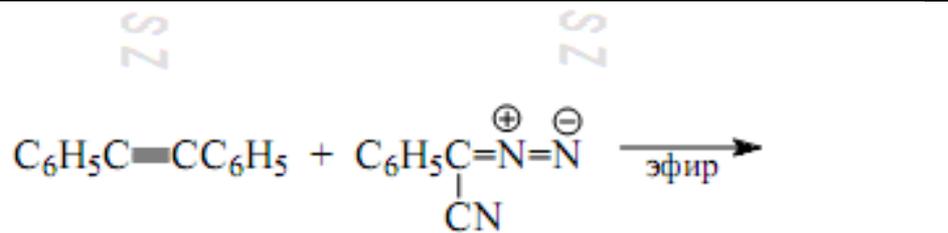
Ring 6.95-7.27
 CH_2 -0.51



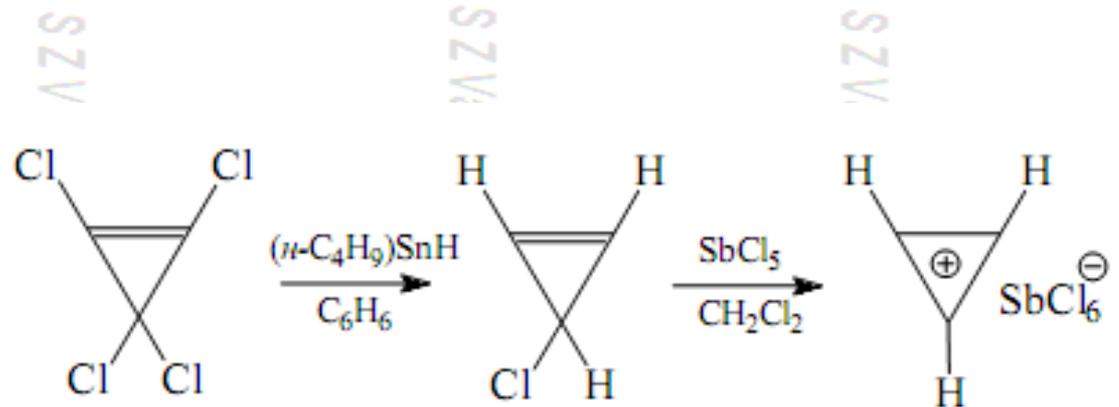
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Outer 9.0
Inner -3.0

- 2 электрона

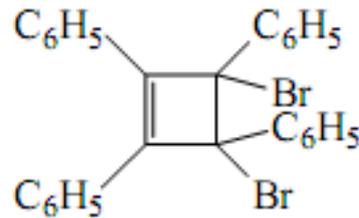


SZ Varsadze's lectures

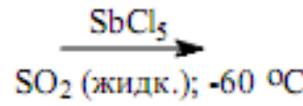


- 2 электрона

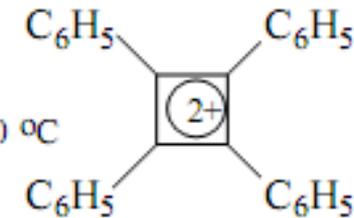
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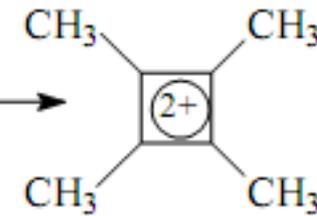
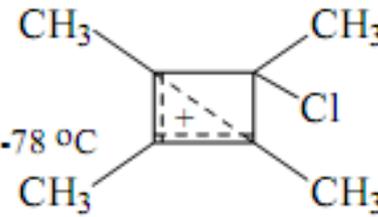
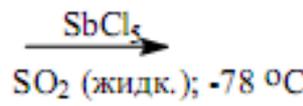
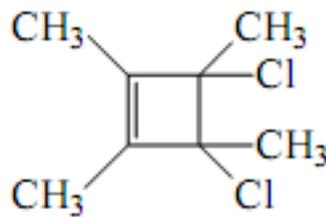
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S Z Varsadze's



S Z Varsadze's



lectures

lectures

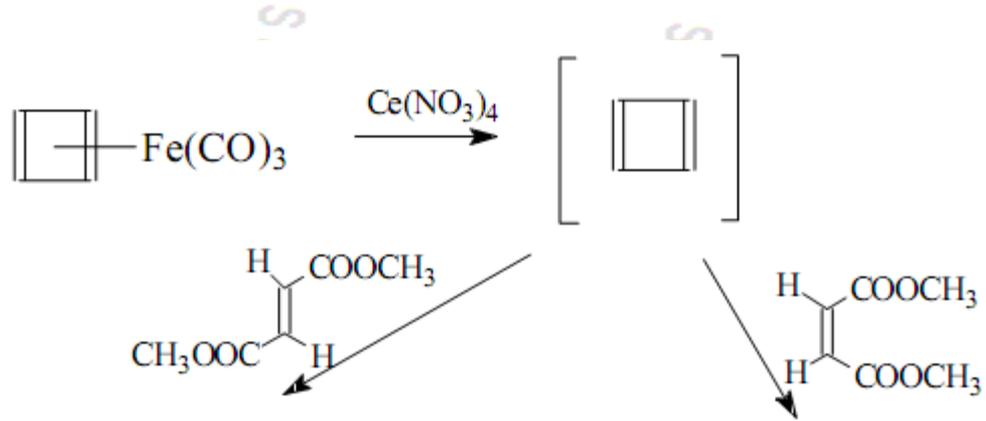
lectures

lectures

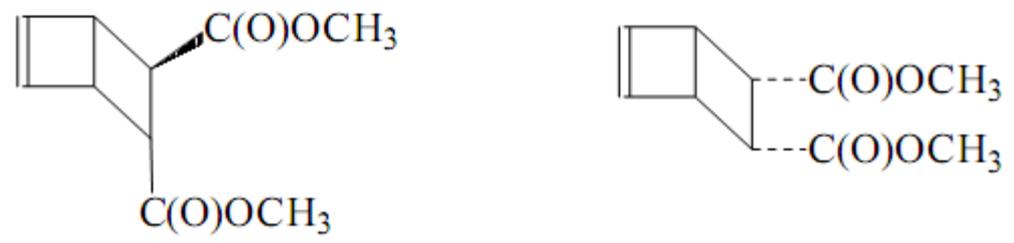
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- 4 электрона

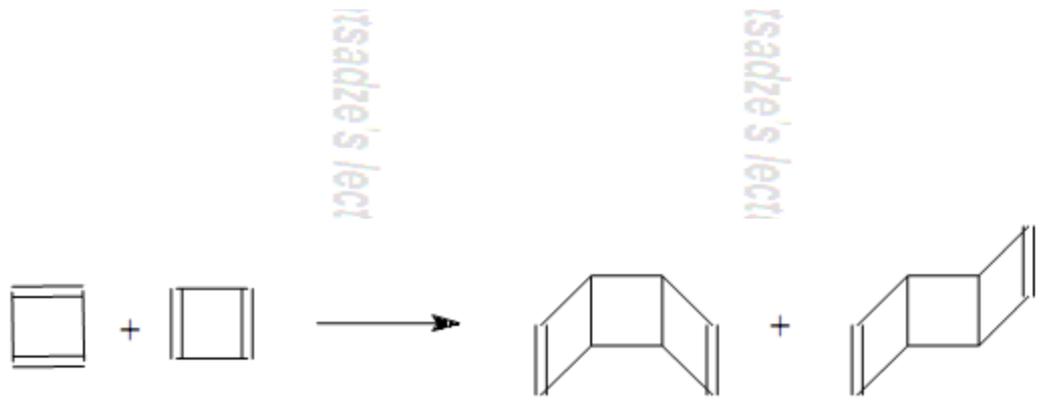
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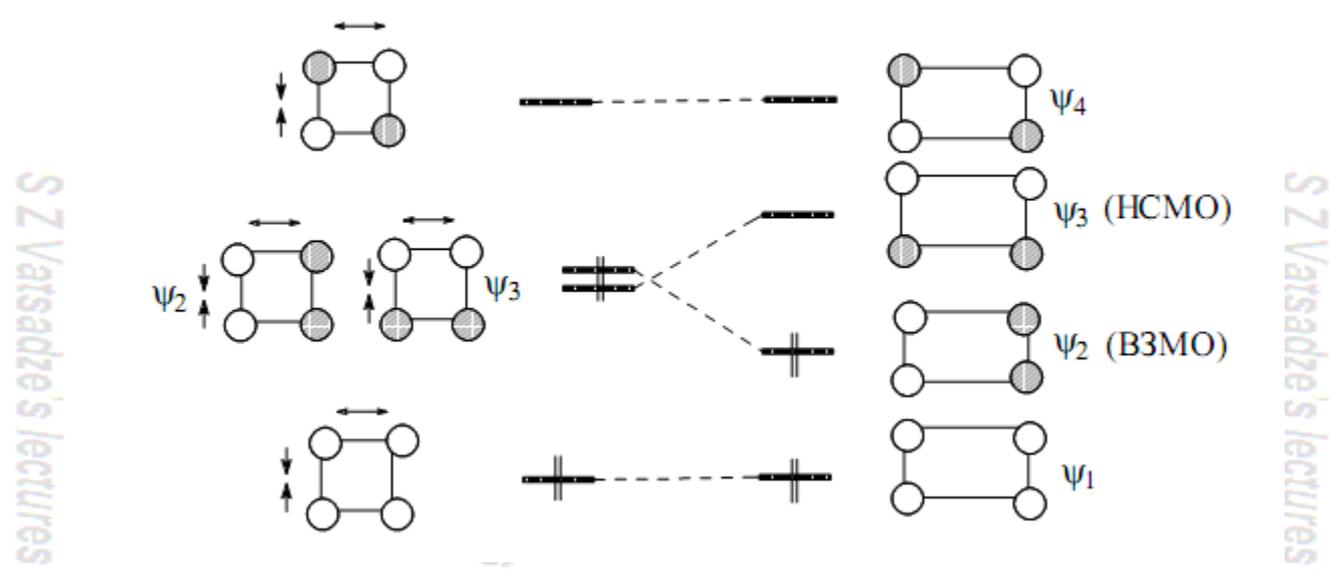
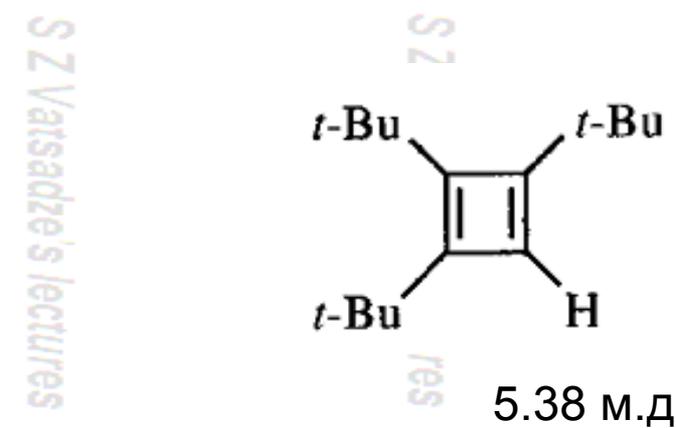
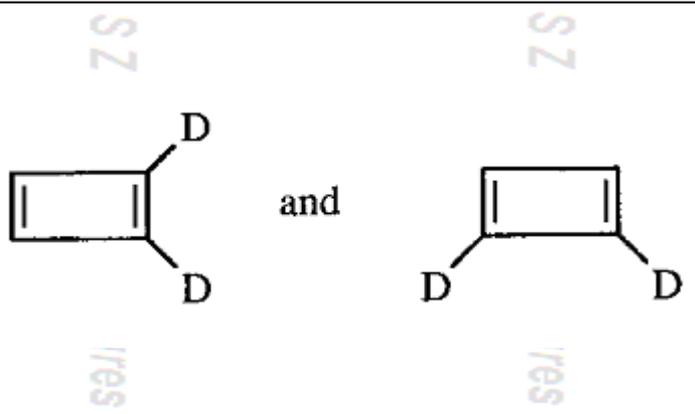
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S Z Varsadze's lectures



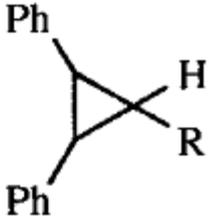
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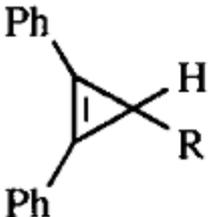
Расчеты – 1.57 и 1.34 ангстр.

- 4 электрона

S Z Varsadze's lectures

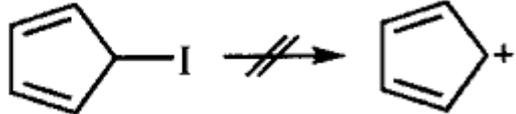


S Z Varsad

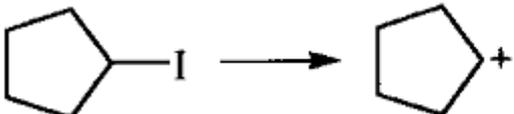


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S Z Varsadze's lectures



S Z Varsad



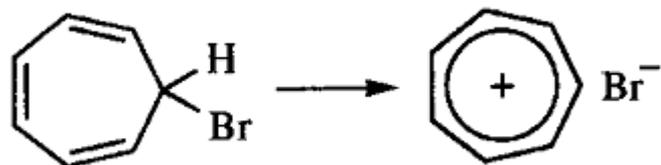
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S Z Varsadze's lectures

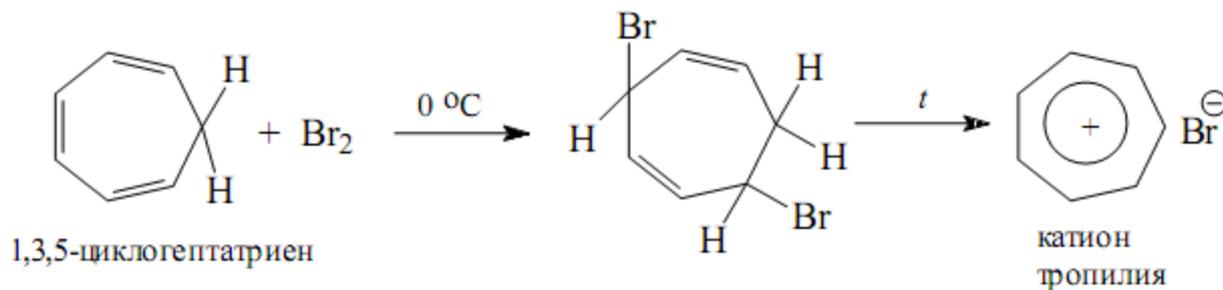
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- 6 электронов

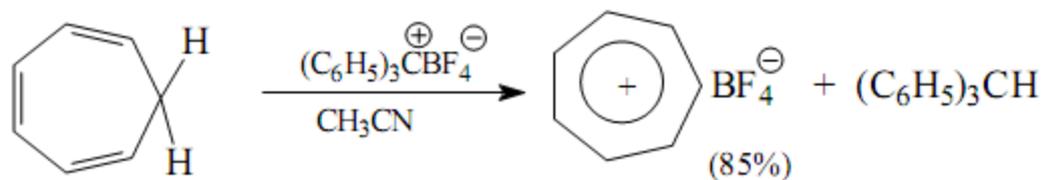
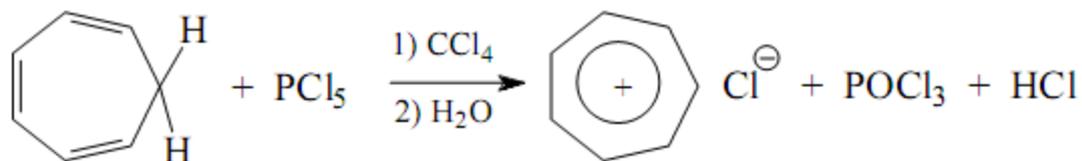
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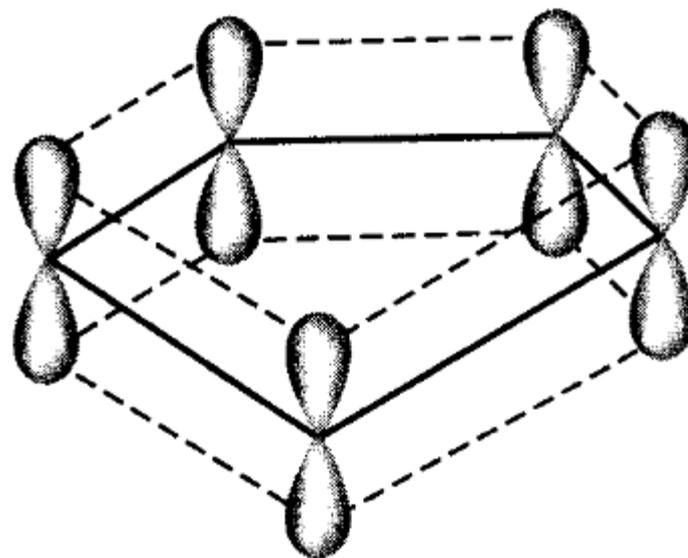
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- Электронное строение: линейный и циклический полиен



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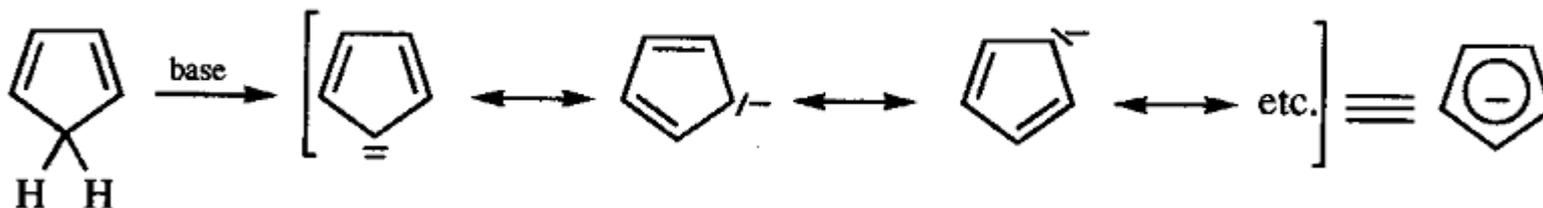
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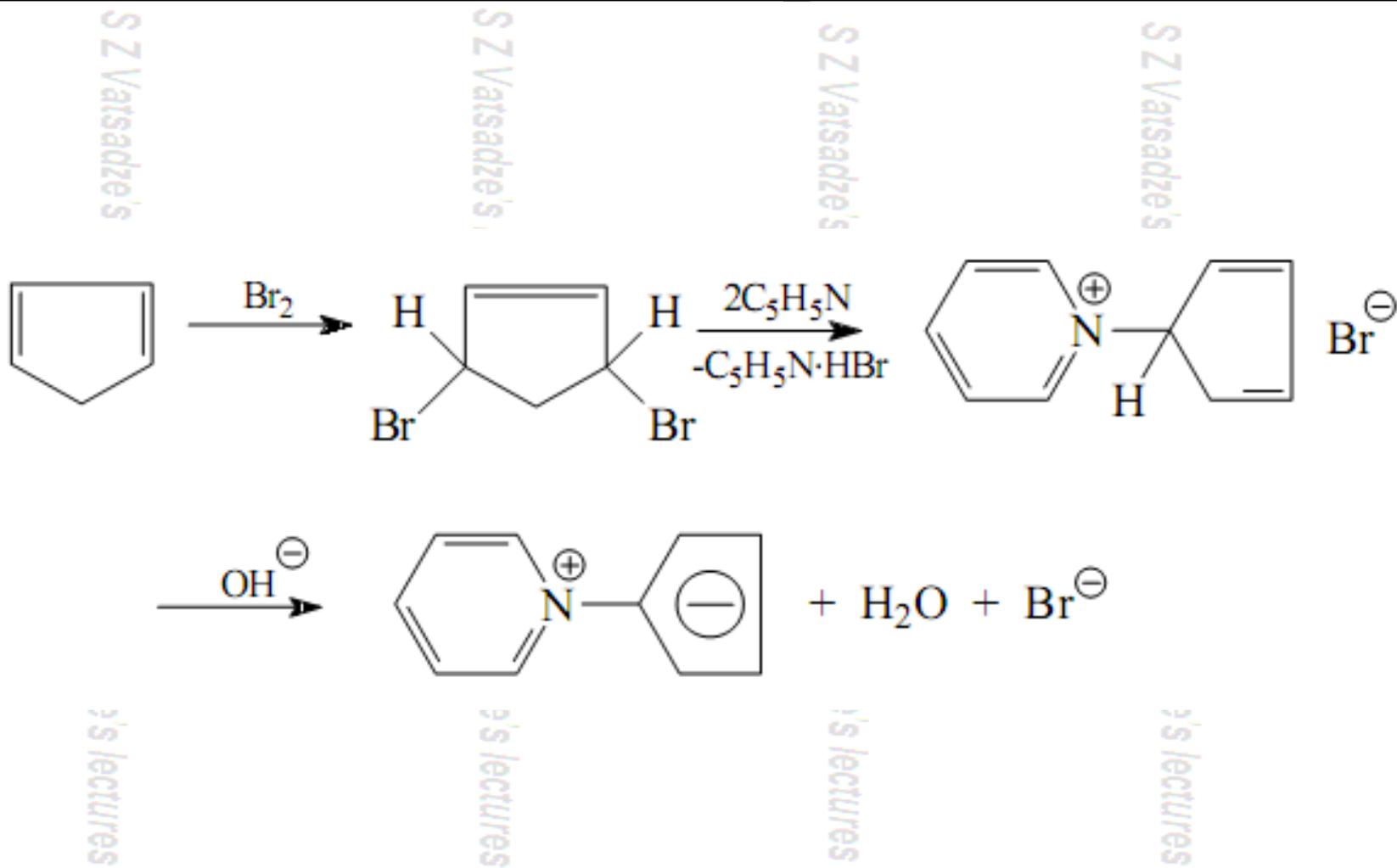
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S Z Varsadze

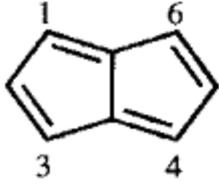


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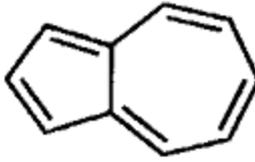


- 6 электронов ?

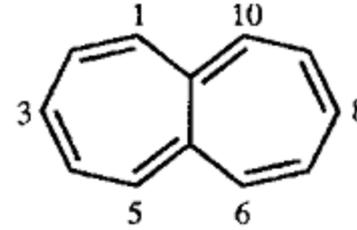
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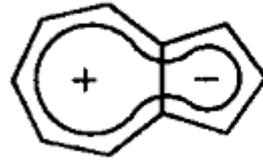


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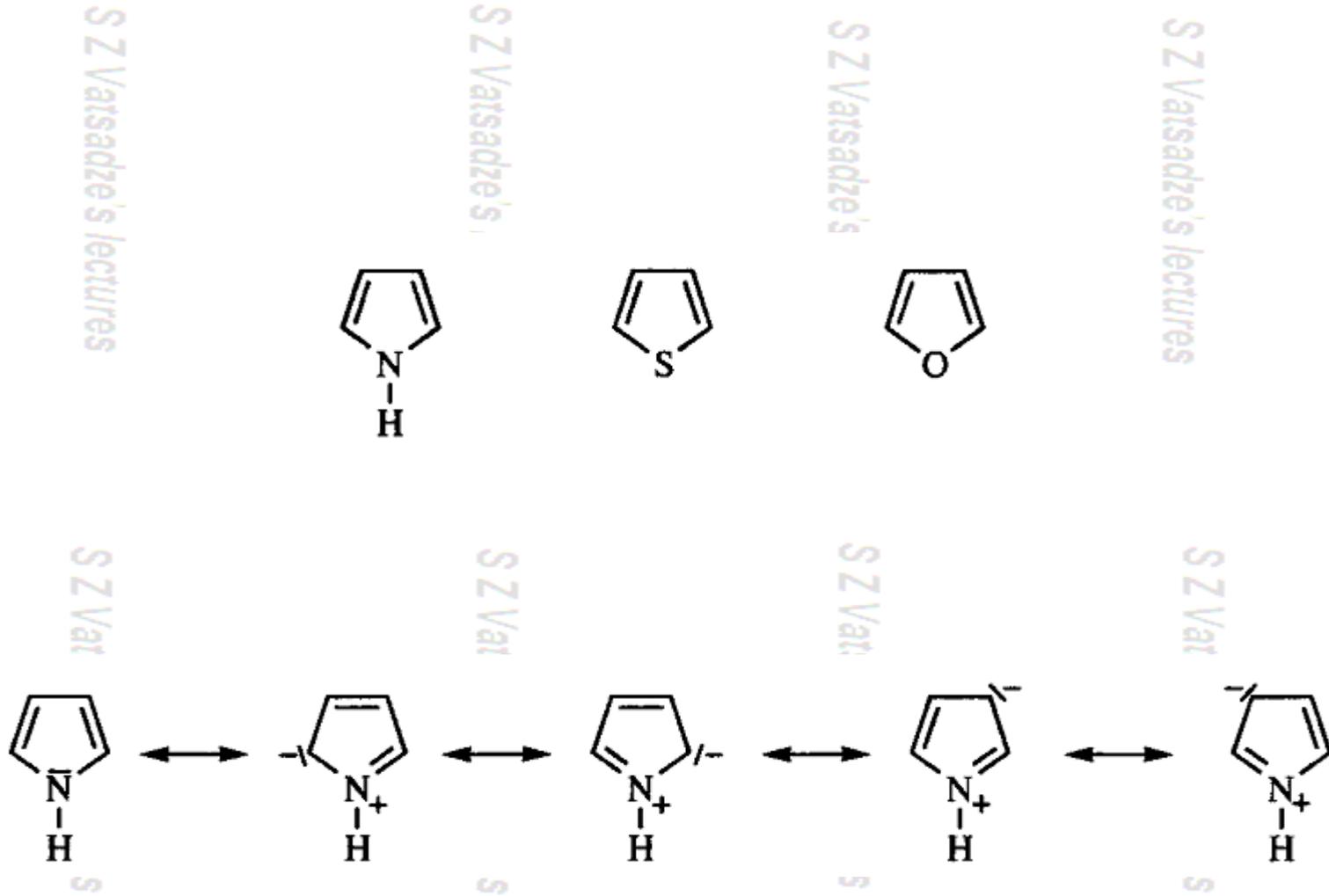


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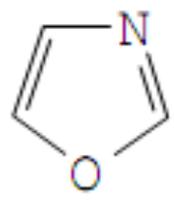
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- Электронное строение: семейство сопряженных полиенов

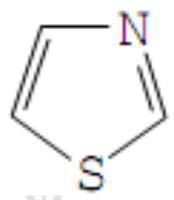


- 6 электронов

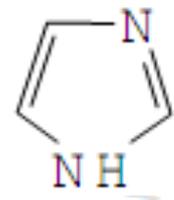
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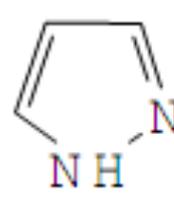
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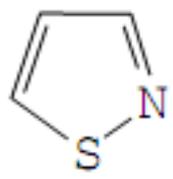
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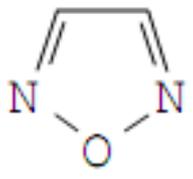
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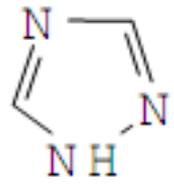
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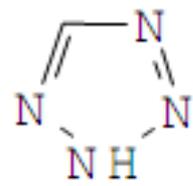
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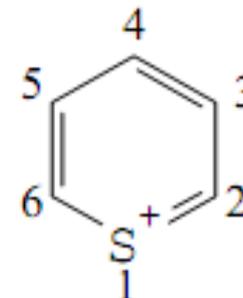
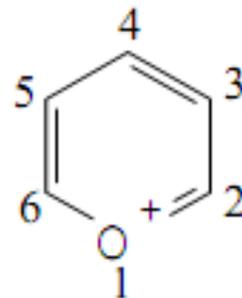
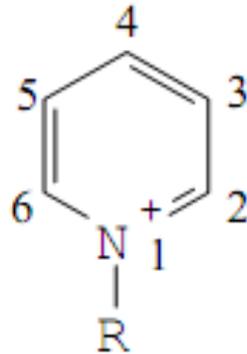
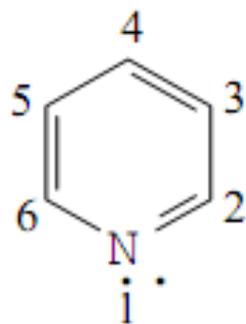
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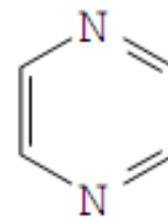
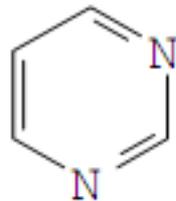
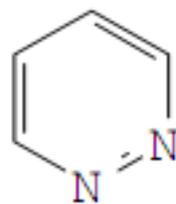
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• Ароматичность

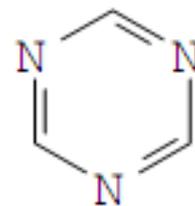
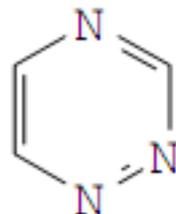
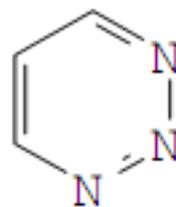


SZ Varsadze's lectures



175a1

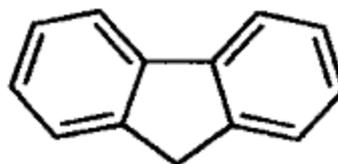
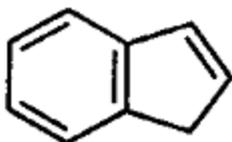
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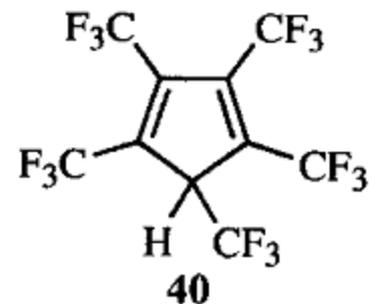
SZ Varsadze's lectures

Цикло-N₆ ?????

- 6 электронов – 10 электронов

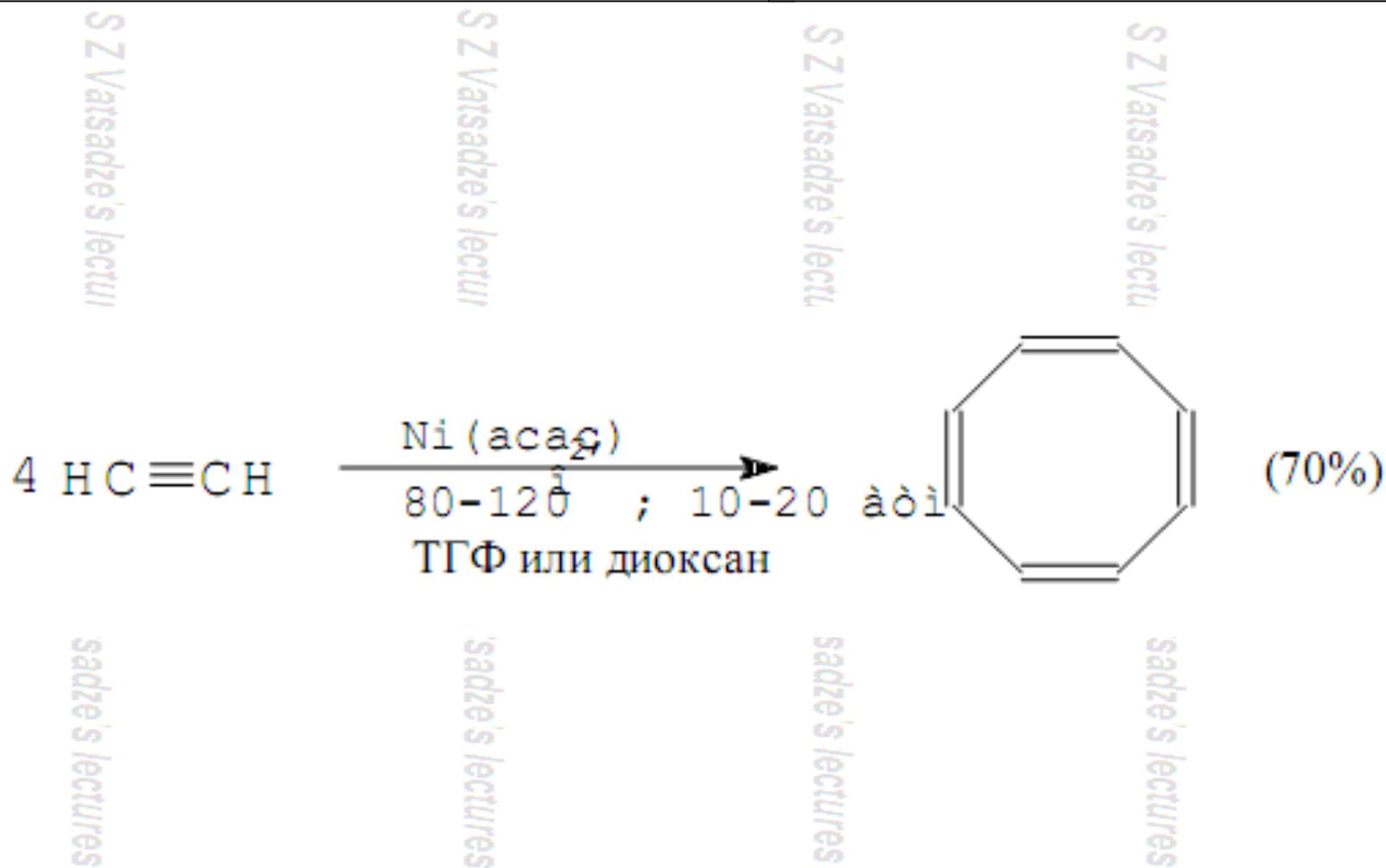


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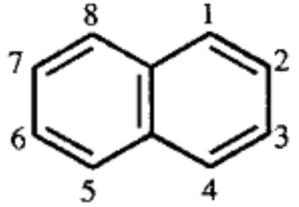
Сильнее азотной к-ты

- 8 электронов



- 10 электронов

S Z Vatsadze's lectures

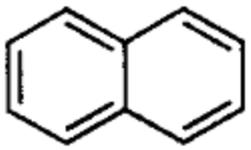


S Z Vatsadze's lectures

S Z Vatsadze's lectures



Z Vatsadze's lectures

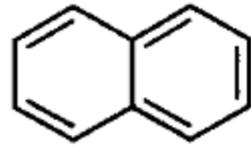


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Z Vatsadze's lectures

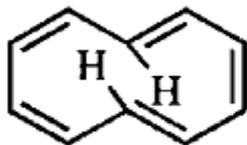
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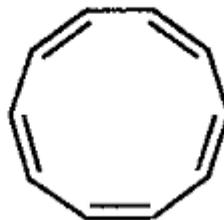
Z Vatsadze's lectures

- 10 электронов

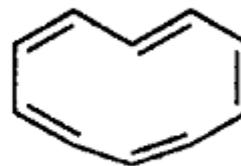
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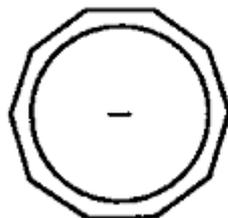


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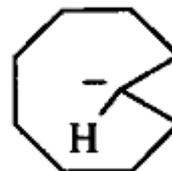


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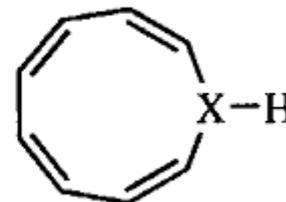
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S Z Varsadze's lectures



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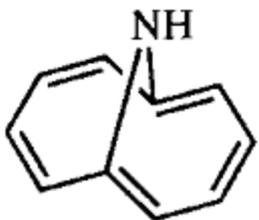


S Z Varsadze's lectures

Для X=N ароматичен

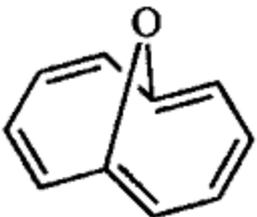
- 10 электронов

S Z Vatsadze's lectures



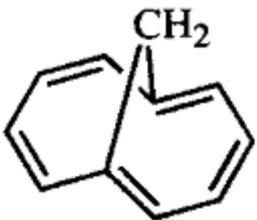
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S Z Vatsadze's lectures

S Z Vatsadze's lectures

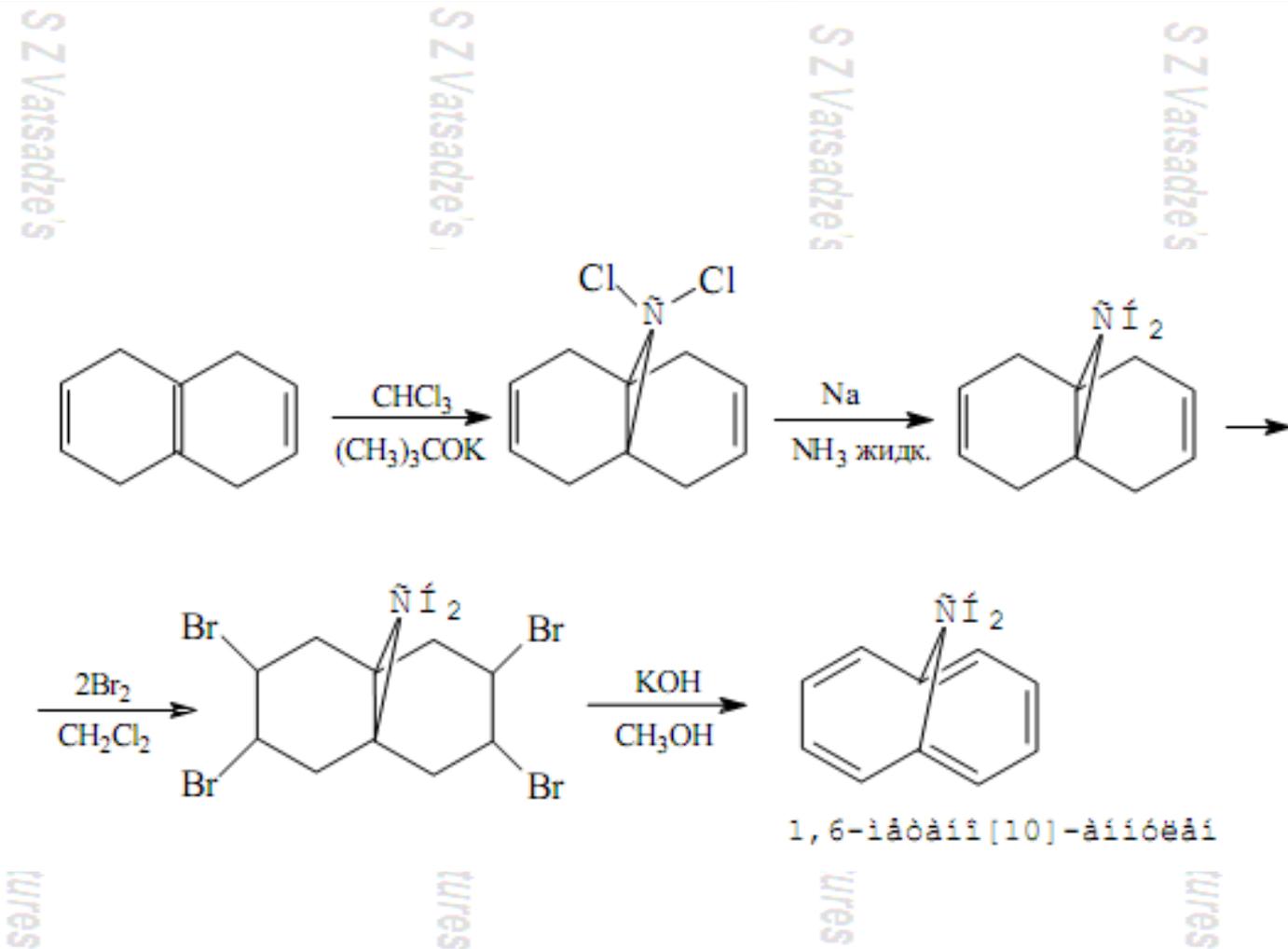


S Z Vatsadze's lectures

S Z Vatsadze's lectures

S Z Vatsadze's lectures

- 10 электронов:
Фогелевские аннулены



• 10 Э: Фогелевские аннулены

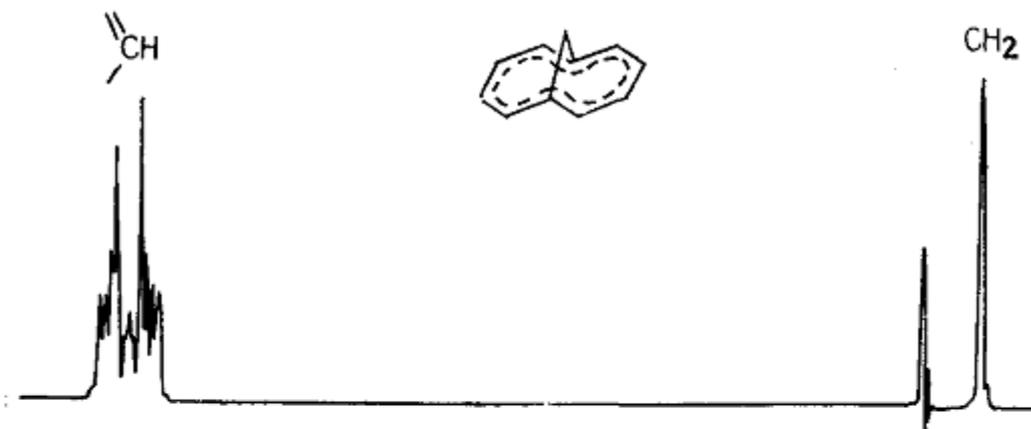
18. Ароматичность

S Z Varsadze's lectures

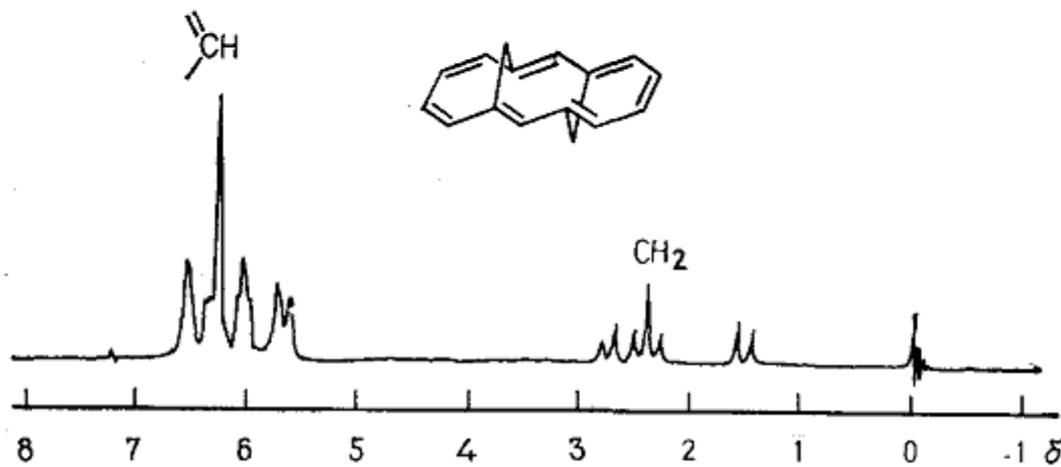
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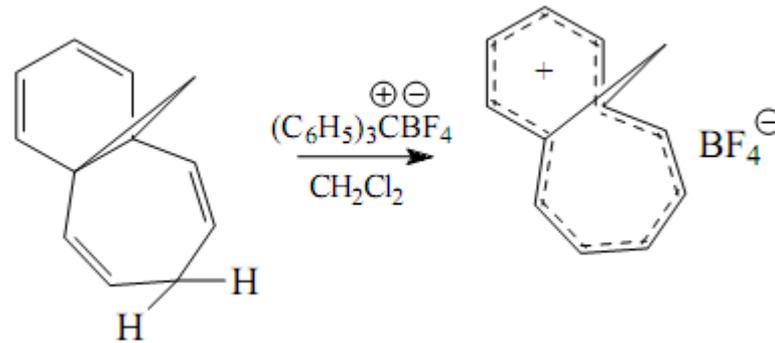
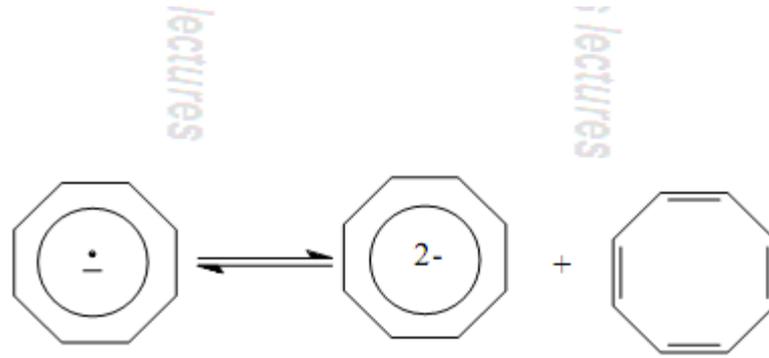
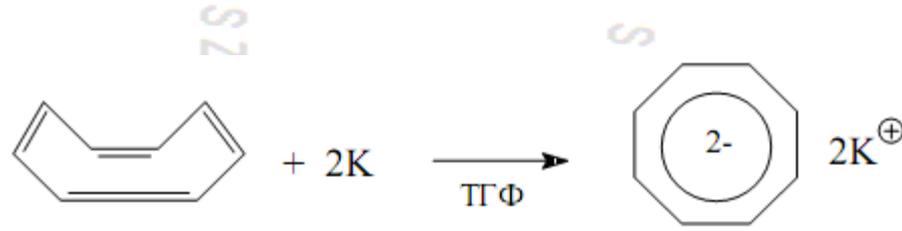


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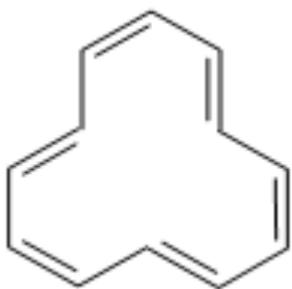
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- 10 электронов



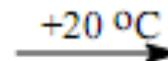
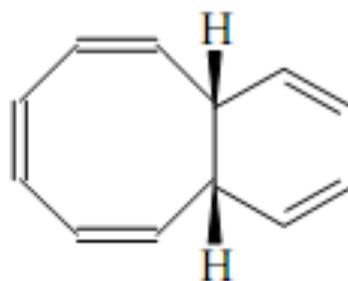
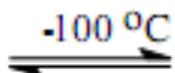
- 12 электронов

S Z Varsadze

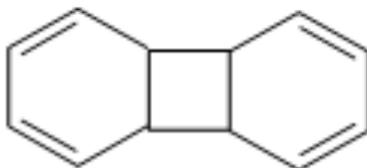


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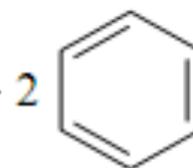
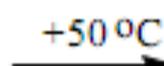
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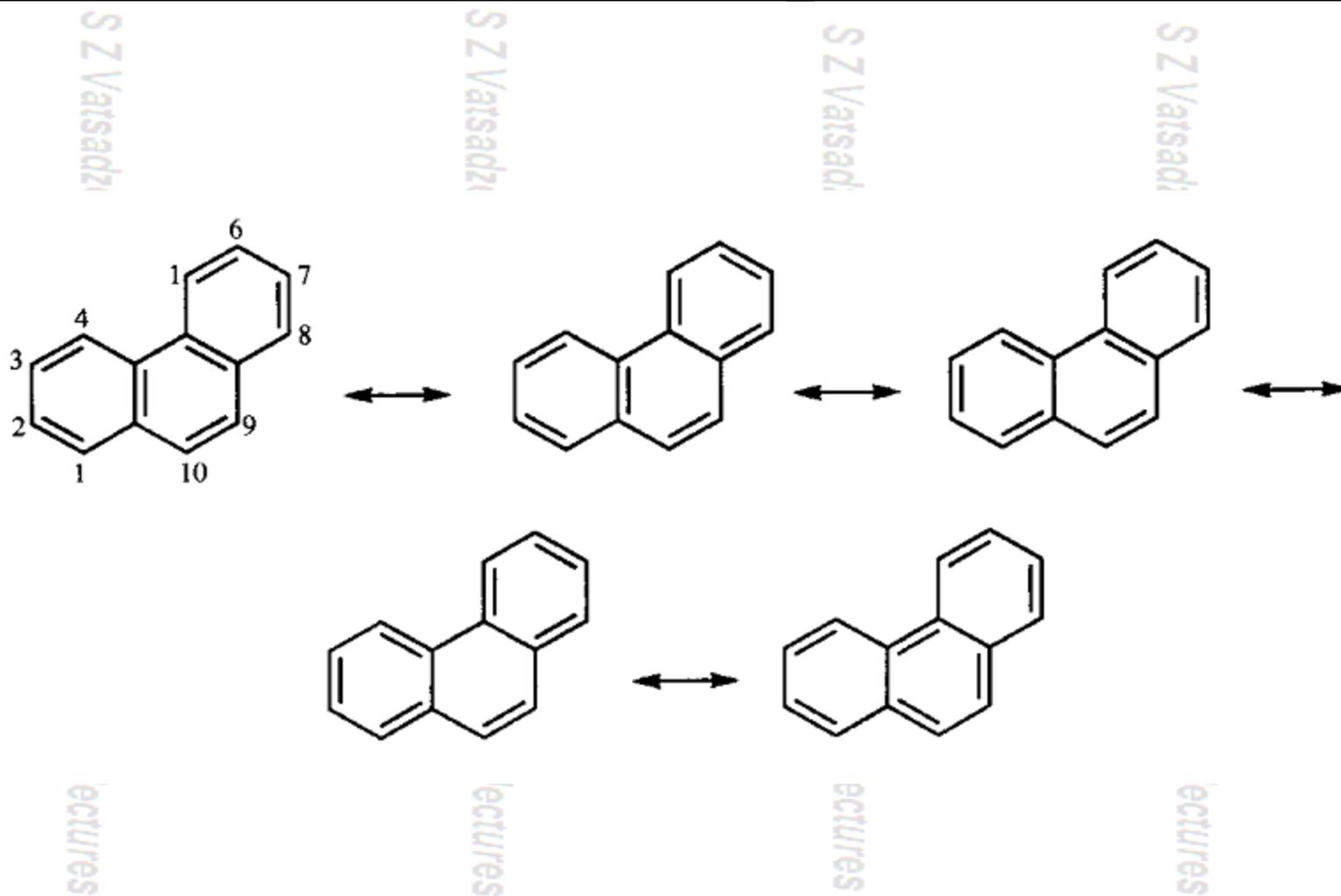


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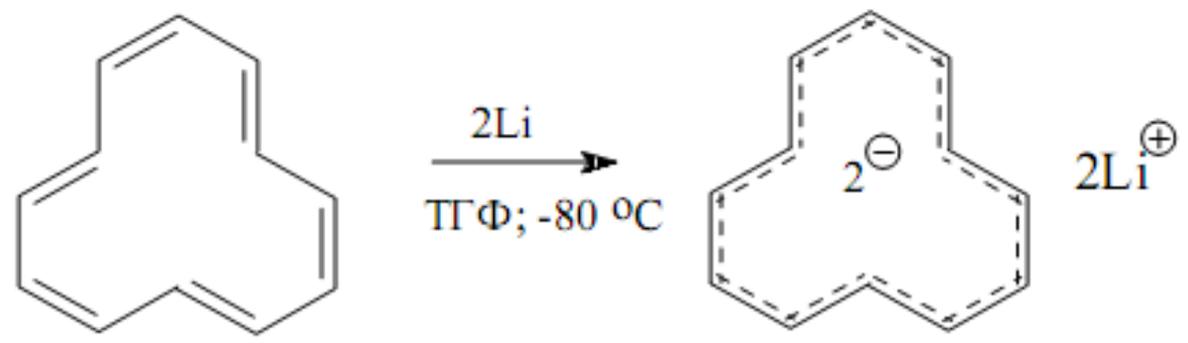
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S Z Varsadze lectures

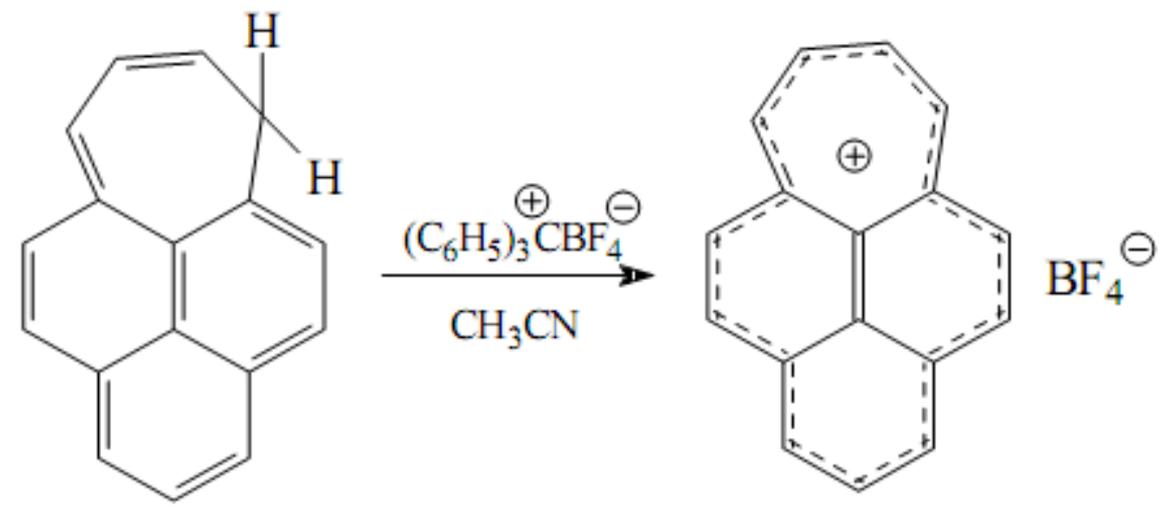
- 14 электронов ?



- 14 электронов



S Z Varsadze's lectures



- 14 электронов

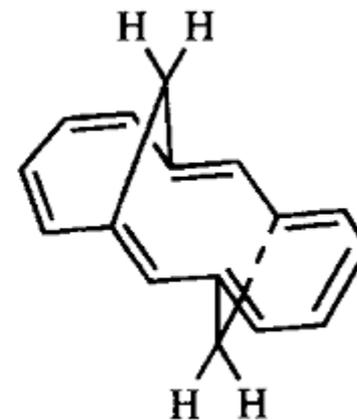
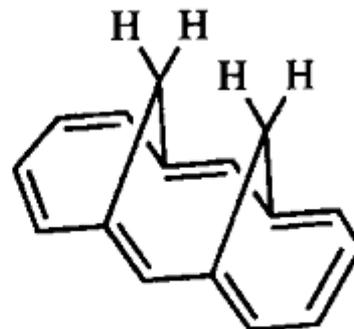
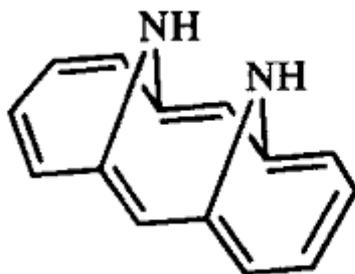
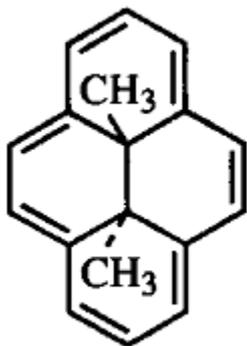
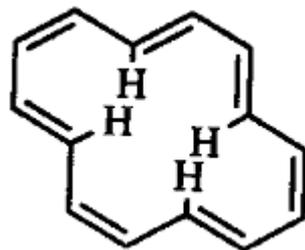
18. Ароматичность

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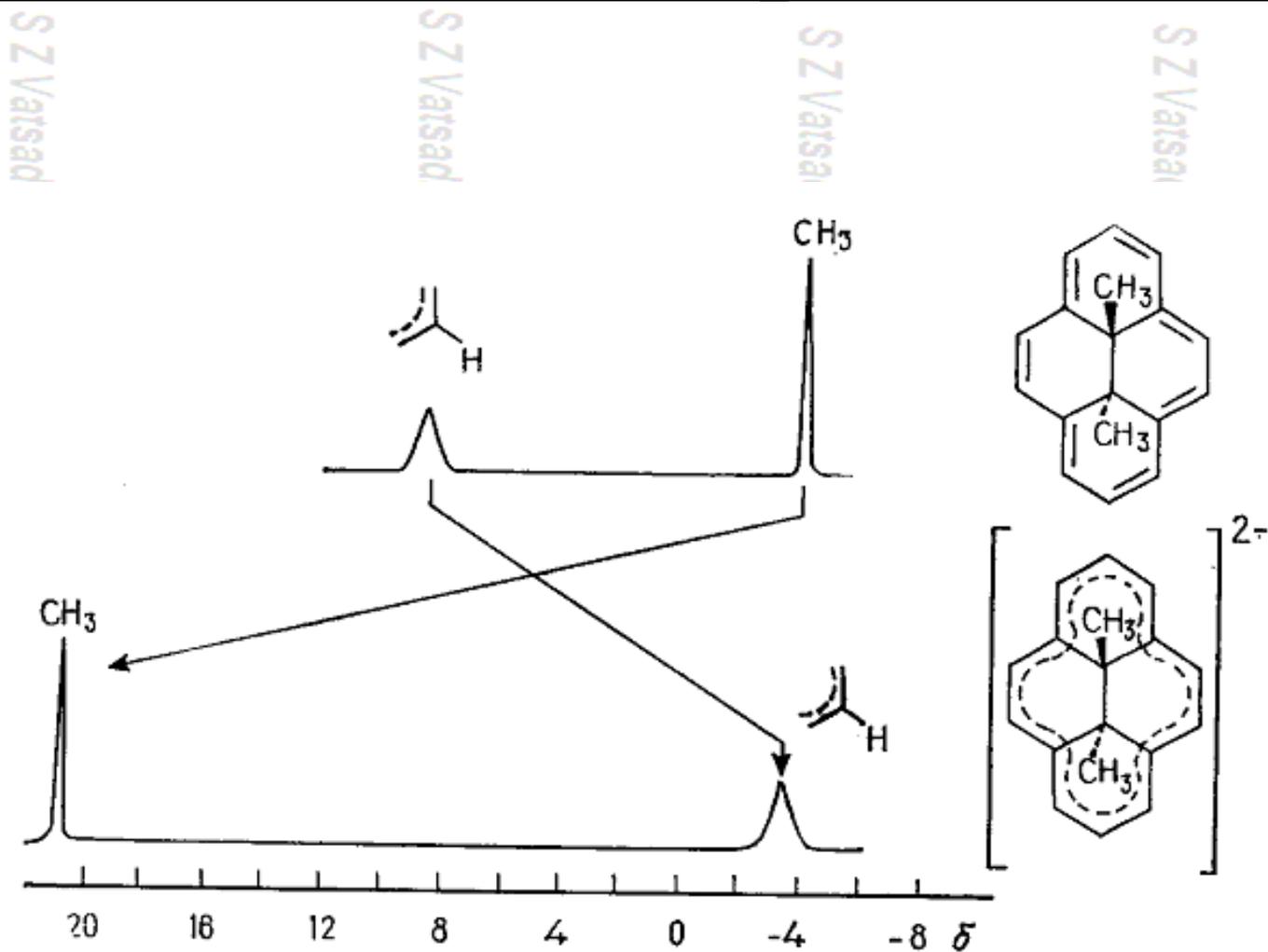
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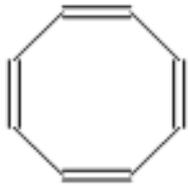


- 14 электронов vs. 16 э.

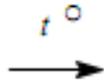


- 16 электронов

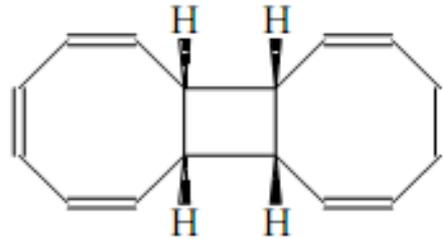
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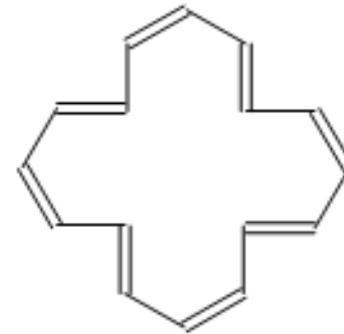
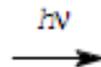


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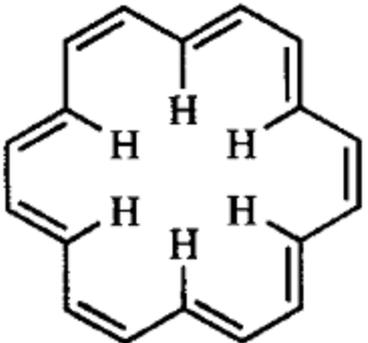
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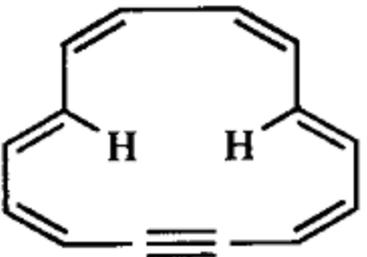
- 18 электронов

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Varsadze's lectures

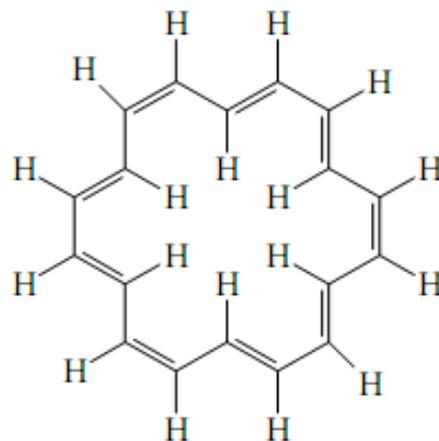
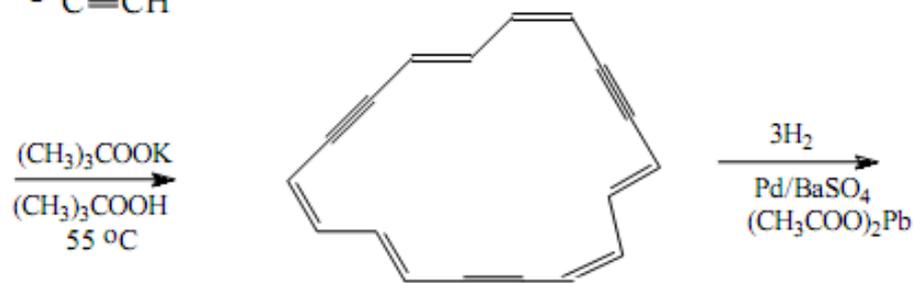
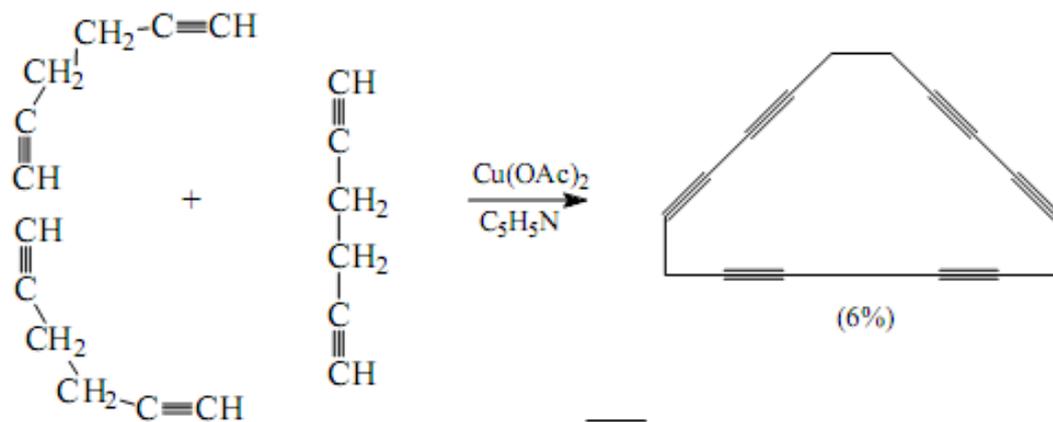
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- 18 электронов

S Z Varsadze's lectures



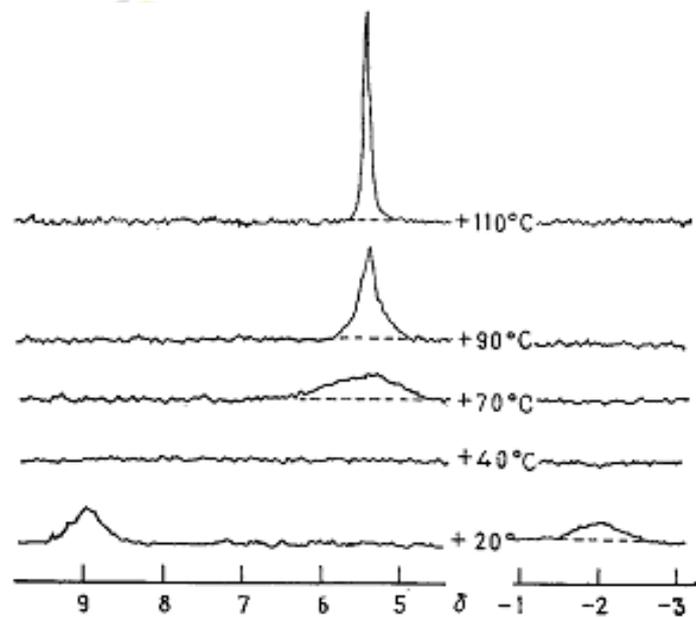
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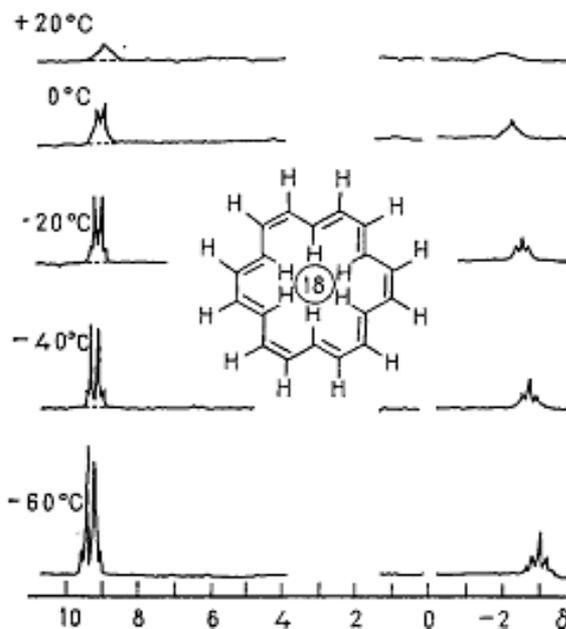
- Ароматичность

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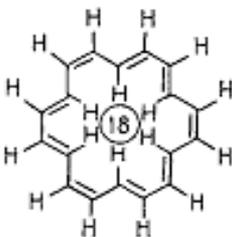


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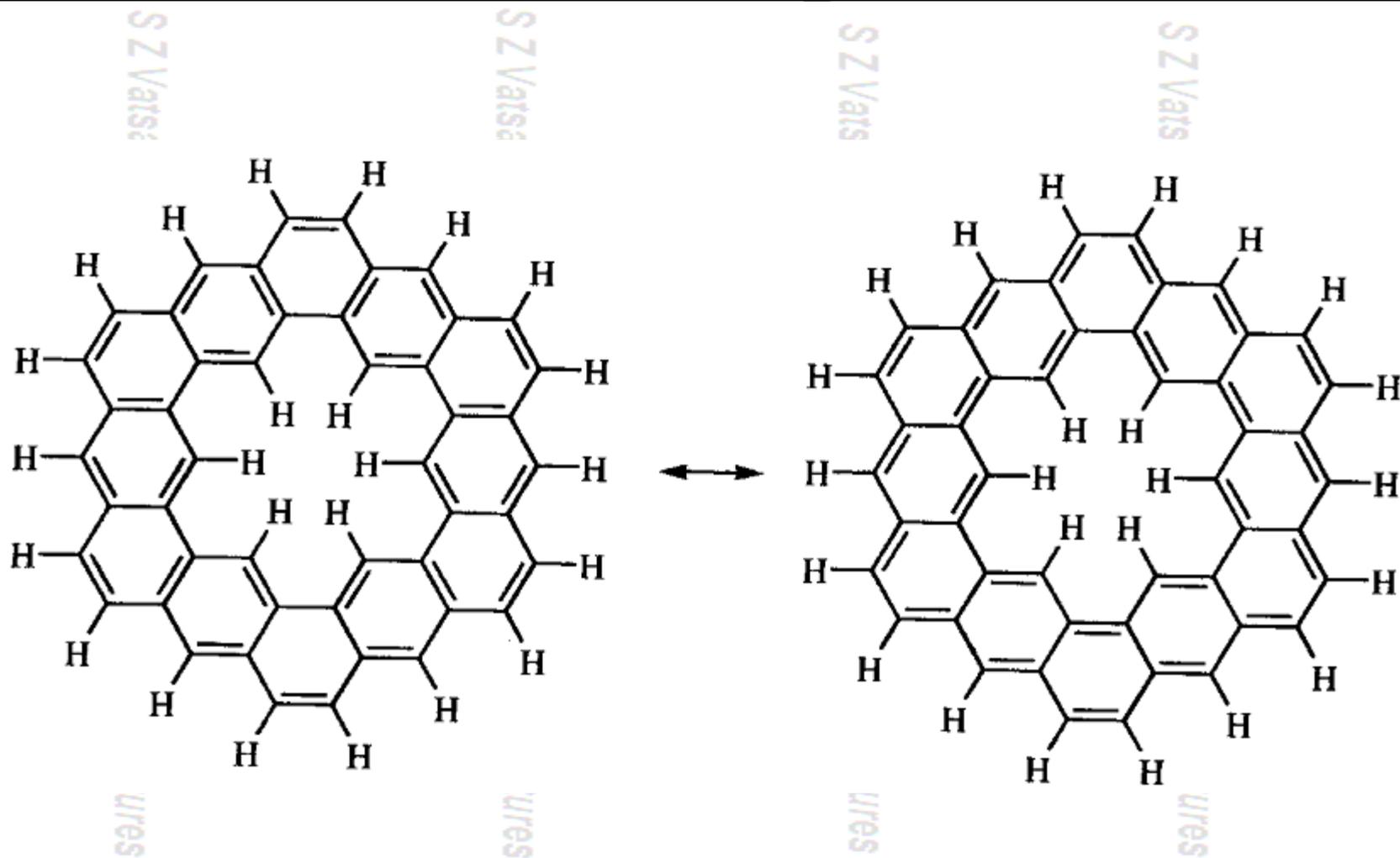
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- Кекулен - ? электронов



Протонный спектр: 7.94; 8.37; 10.45
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