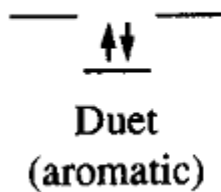
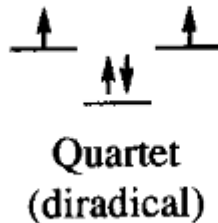


- Электронное строение

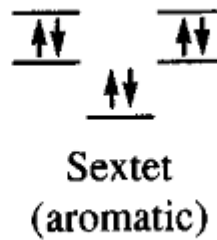
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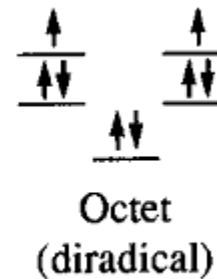
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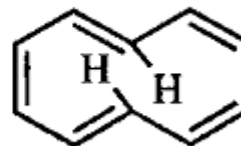
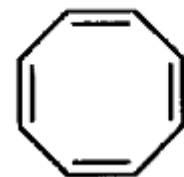
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S Z Var

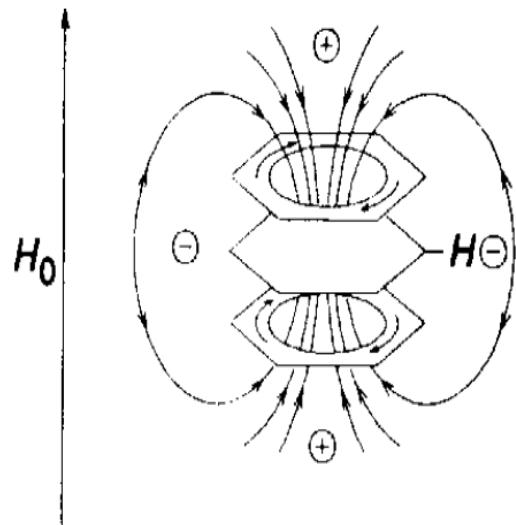


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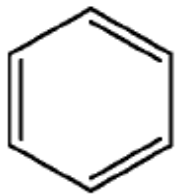
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S Z Varsadze's lectures

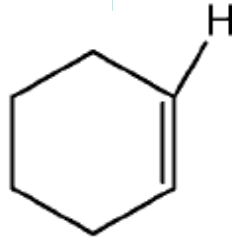
- Критерии ароматичности



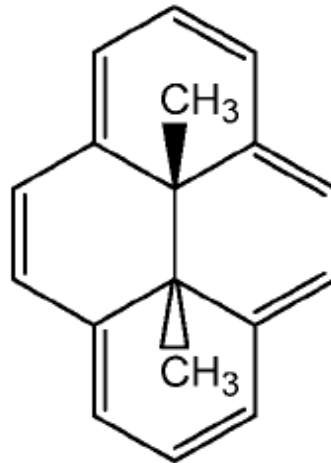
1.4.1. Магнитные критерии: хим. сдвиги  $^1\text{H}$  в спектрах ЯМР



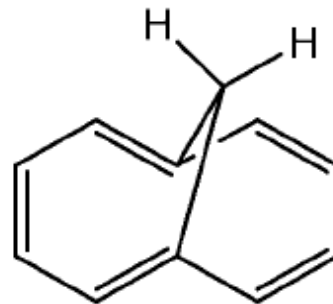
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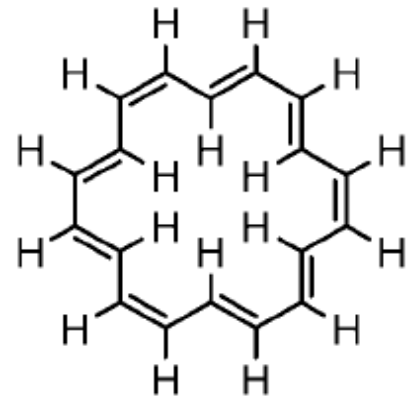
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7



8



9

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

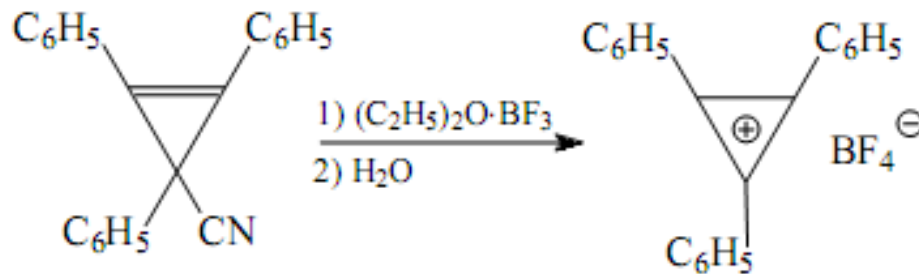
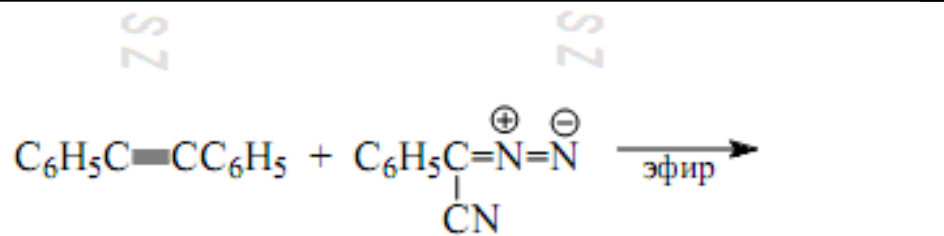
5.6

Ring 8.14-8.67  
 $\text{CH}_3$  -4.25

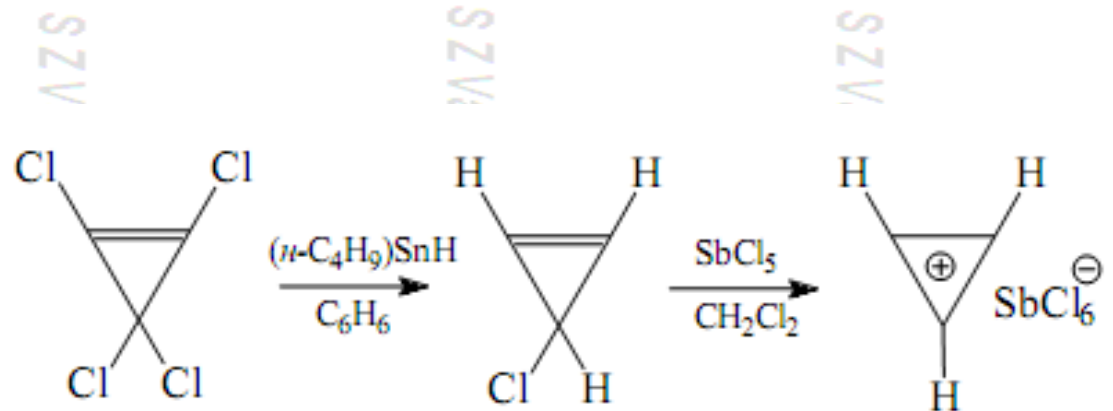
Ring 6.95-7.27  
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Outer 9.0  
 Inner -3.0

- 2 электрона



SZ Varsadze's lectures



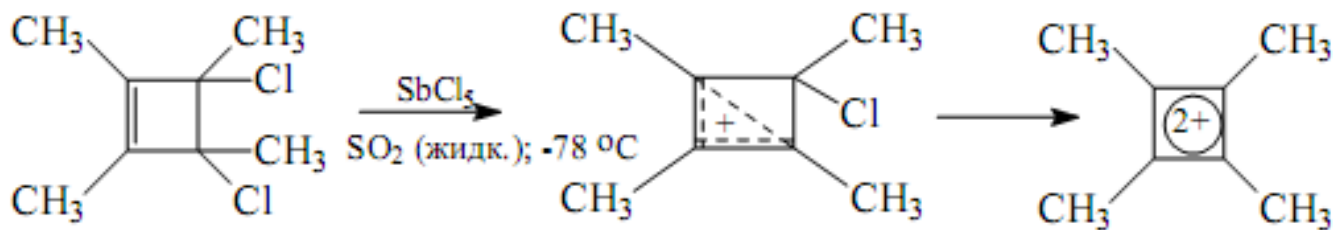
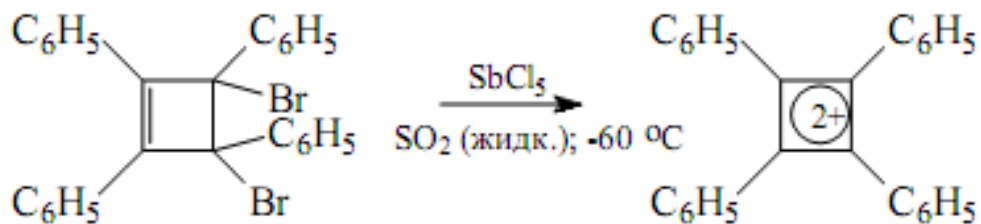
- 2 электрона

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lectures

lectures

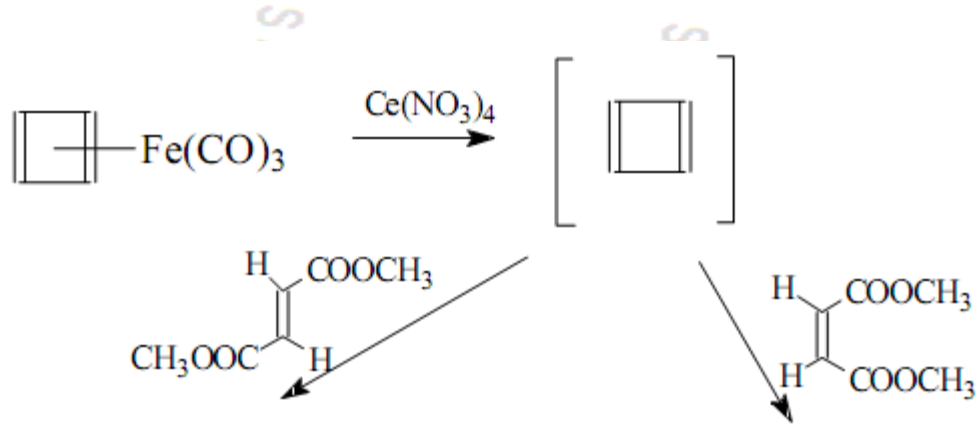
lectures

lectures

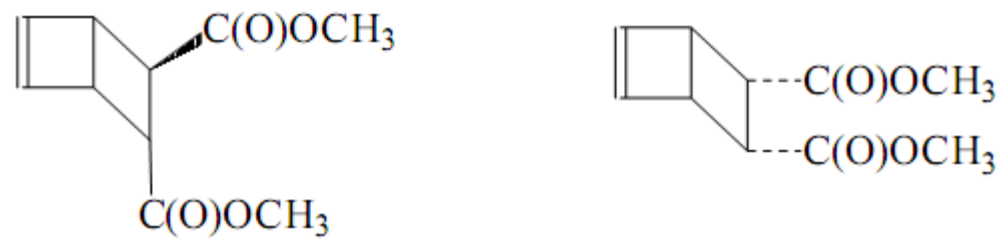
Устойчив при низких темп.

- 4 электрона

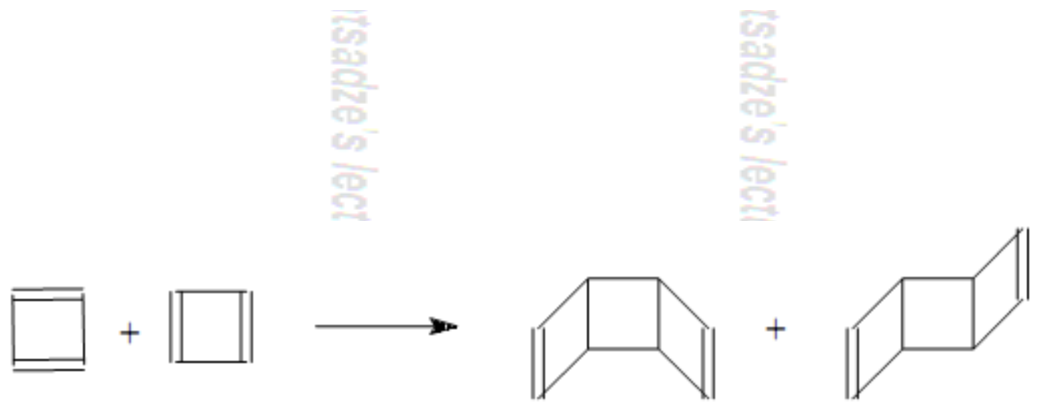
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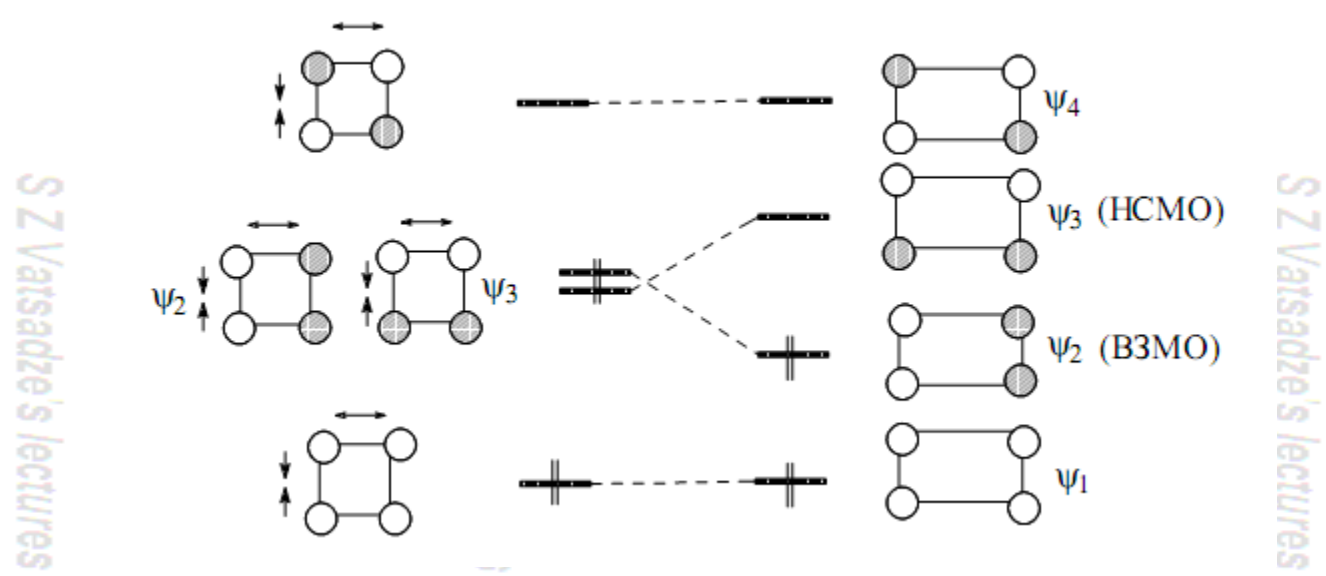
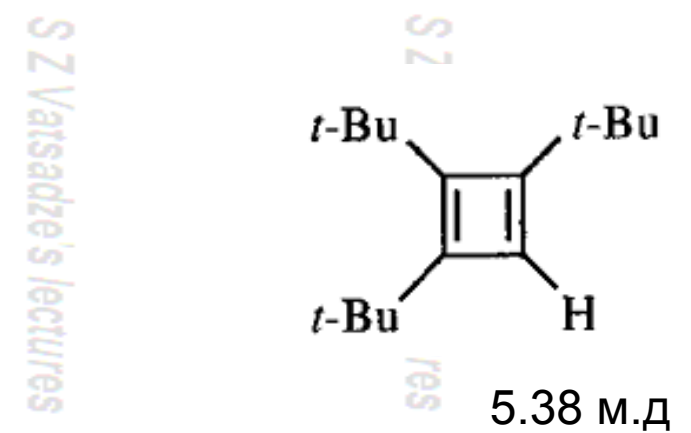
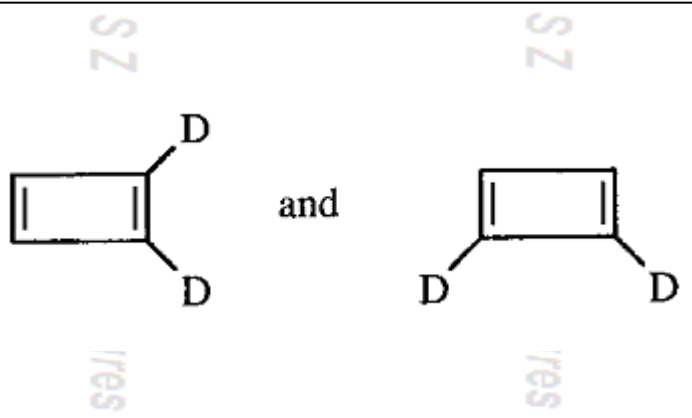
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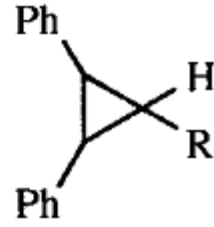
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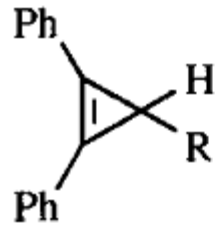
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- 4 электрона

S Z Vatsadze's lectures

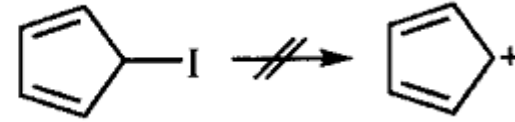


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S Z Vatsadze's lectures



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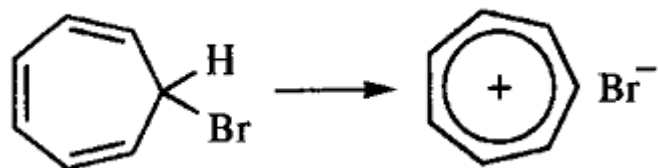
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S Z Vatsadze's lectures

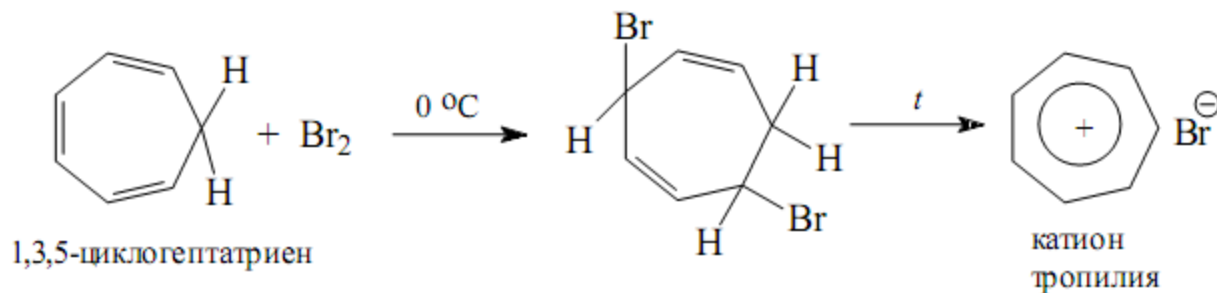


- 6 электронов

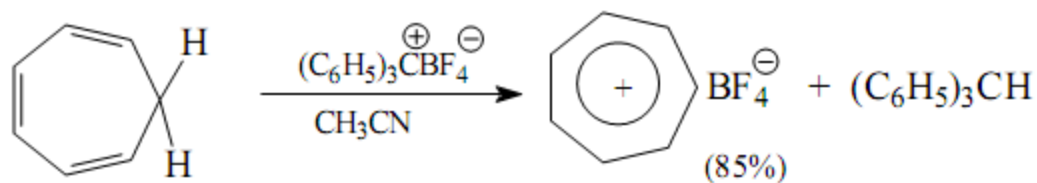
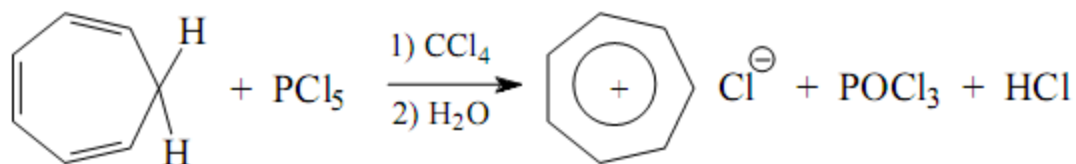
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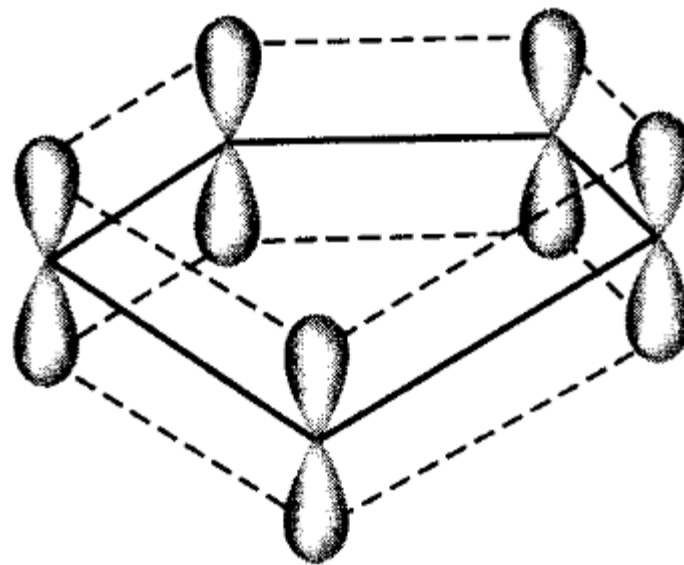
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S Z Varsadze's lectures



- Электронное строение: линейный и циклический полиен



S Z Varsadze's lectures

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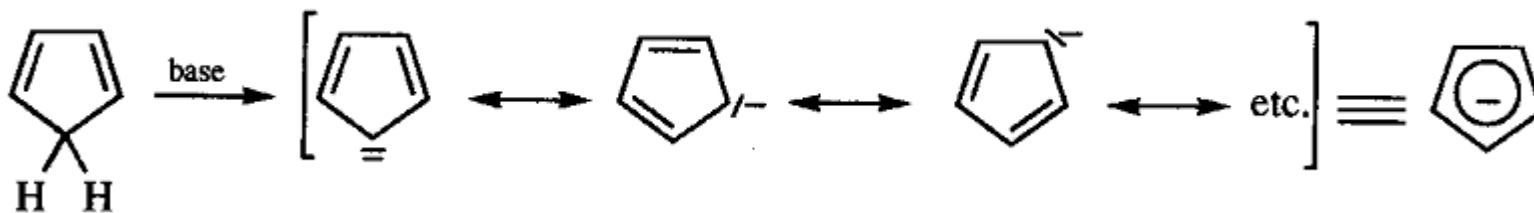
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S Z Varsadze

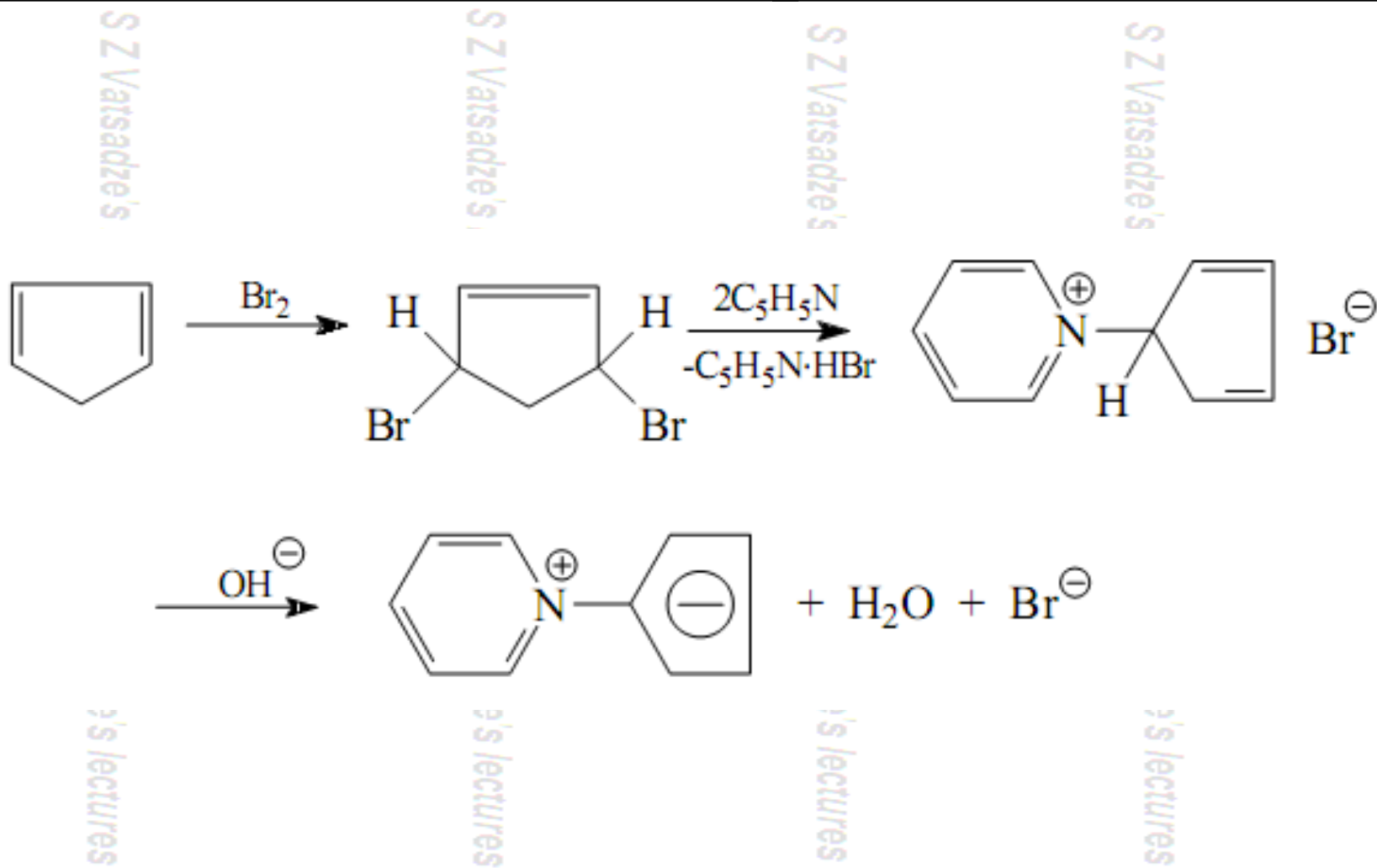
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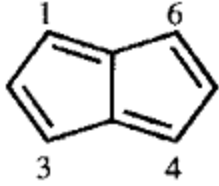


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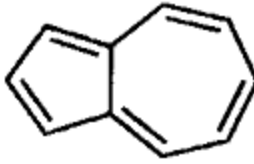


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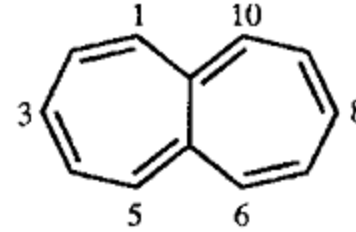
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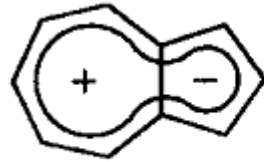


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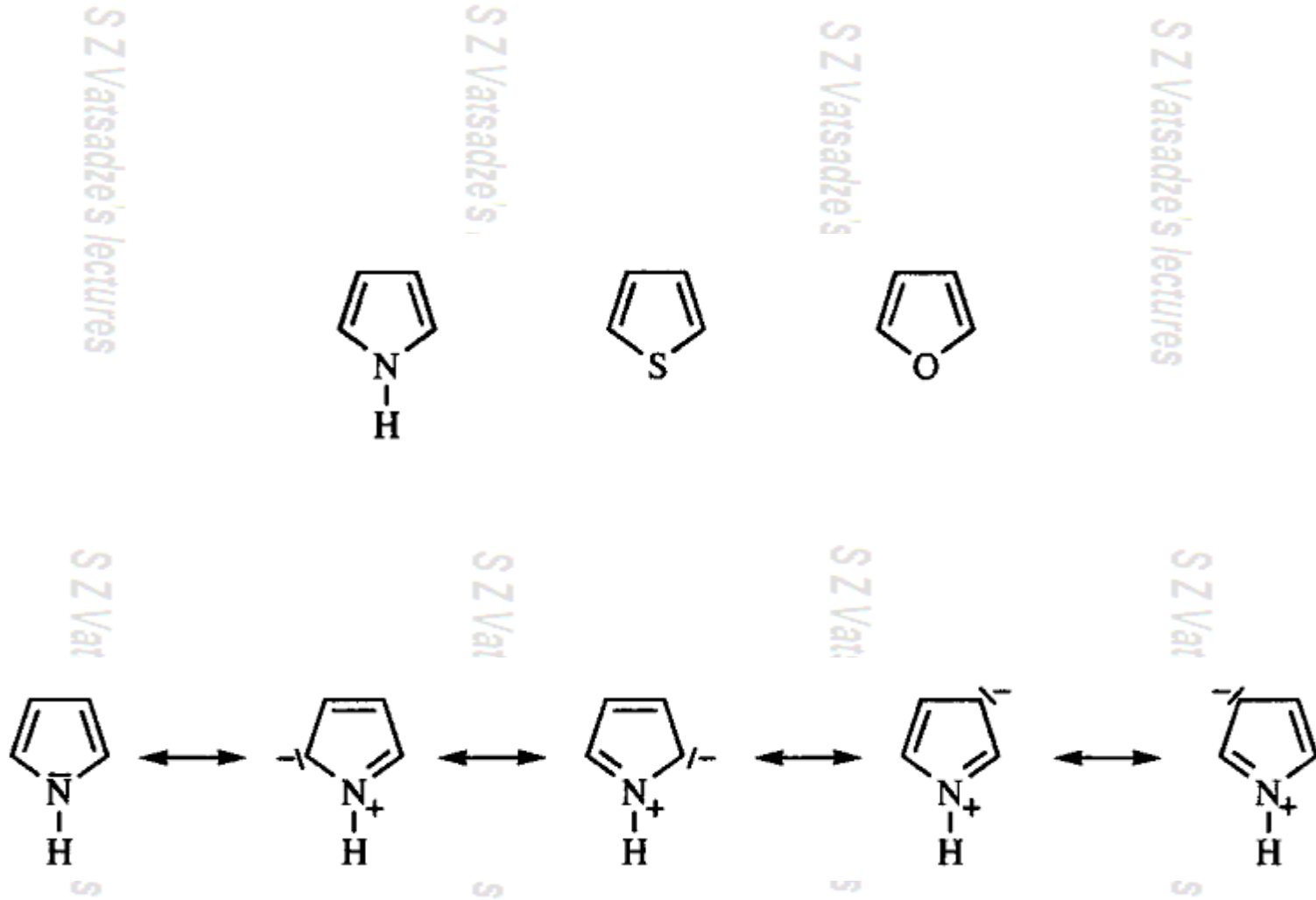


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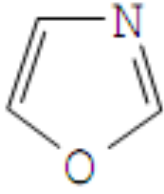
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- Электронное строение: семейство сопряженных полиенов

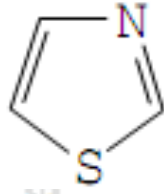


- 6 электронов

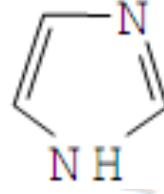
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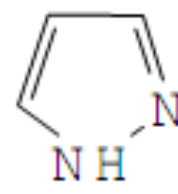
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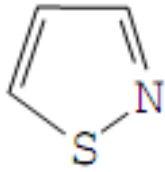
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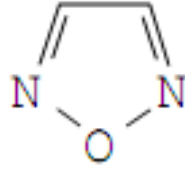
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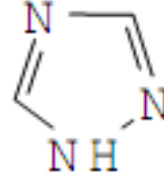
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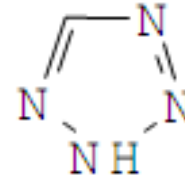
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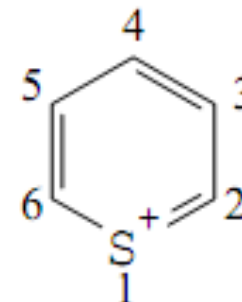
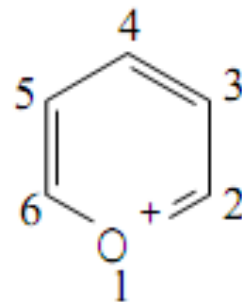
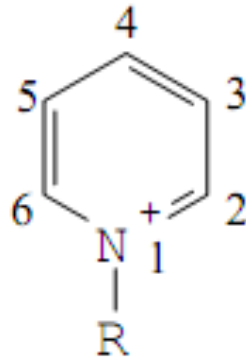
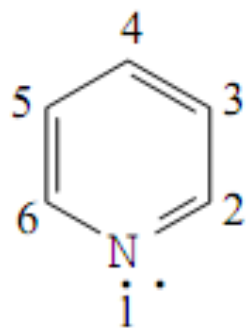
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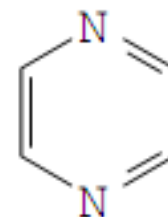
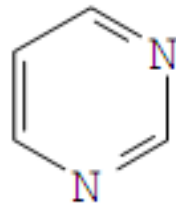
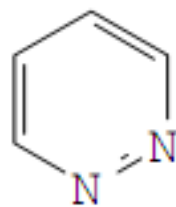
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• Ароматичность

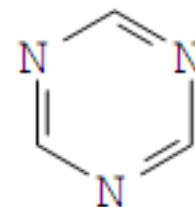
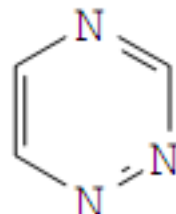
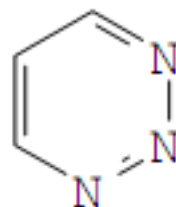


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175a1

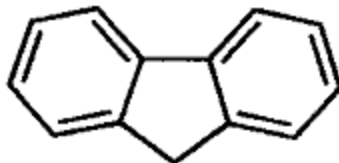
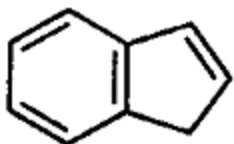
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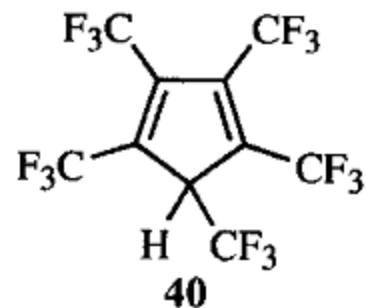
SZ Varsadze's lectures

Цикло-N<sub>6</sub> ?????

- 6 электронов – 10 электронов



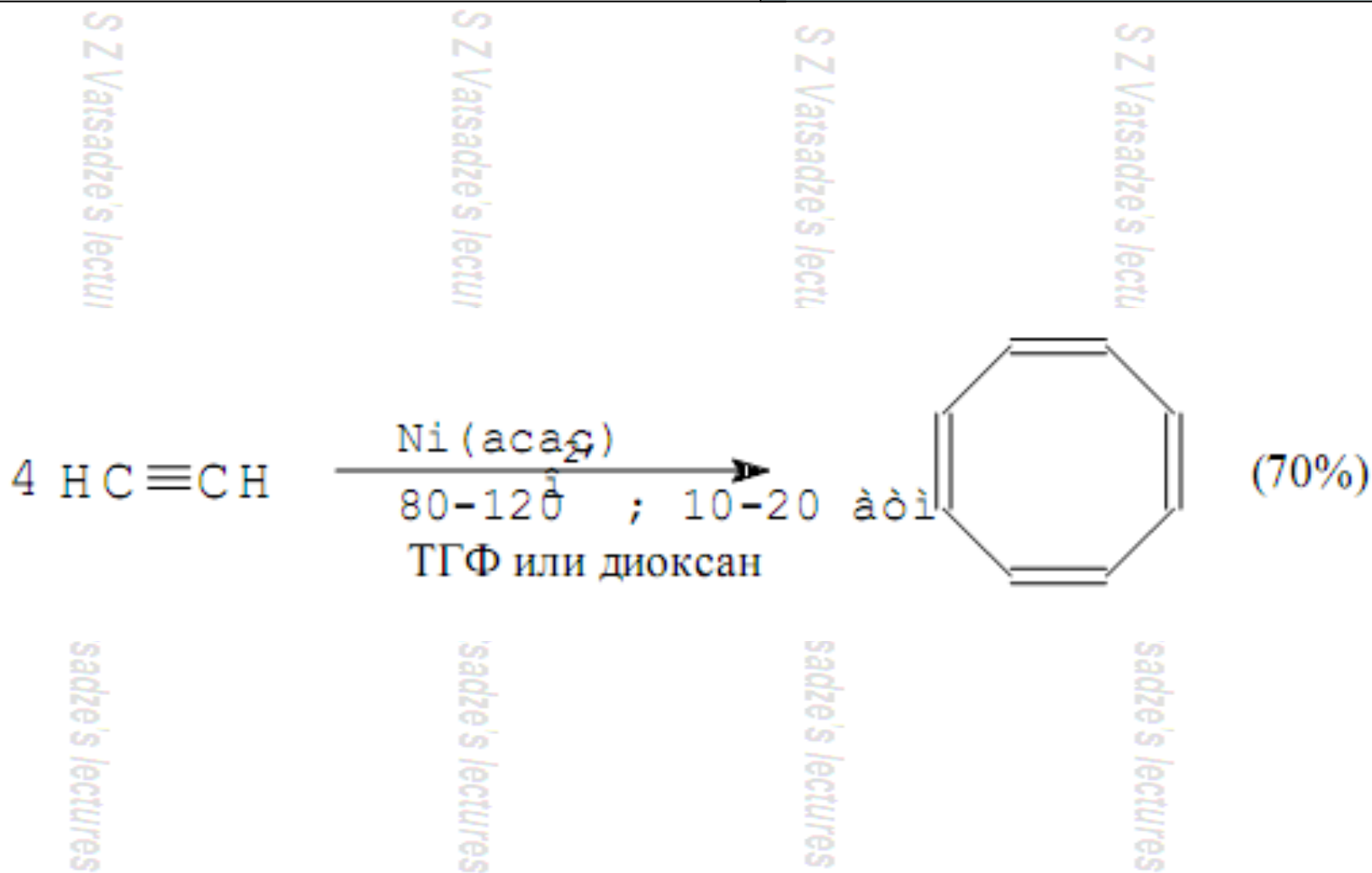
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Сильнее азотной к-ты

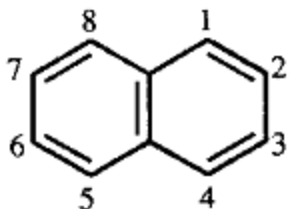


- 8 электронов



- 10 электронов

S Z Vatsadze's lectures

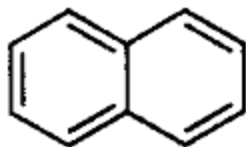


S Z Vatsadze's lectures

S Z Vatsadze's lectures



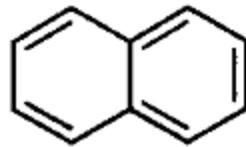
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Z Vatsadze's lectures

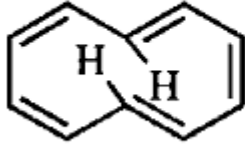


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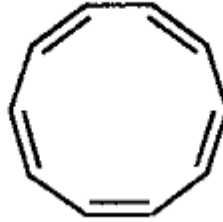
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- 10 электронов

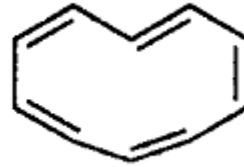
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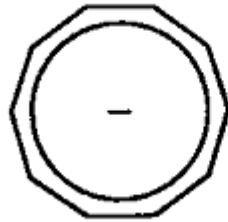


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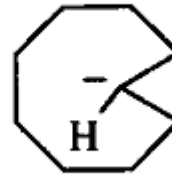


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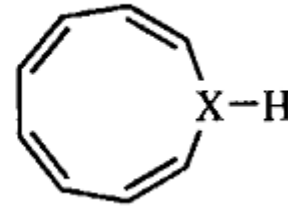
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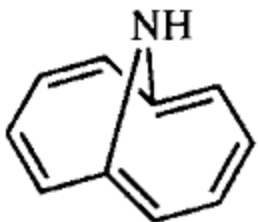


S Z Varsadze's lectures

Для X=N ароматичен

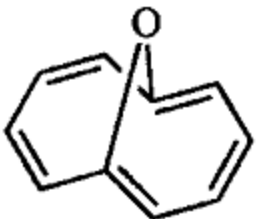
- 10 электронов

S Z Vatsadze's lectures



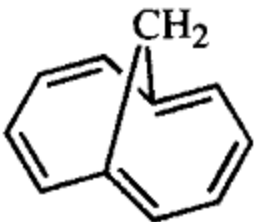
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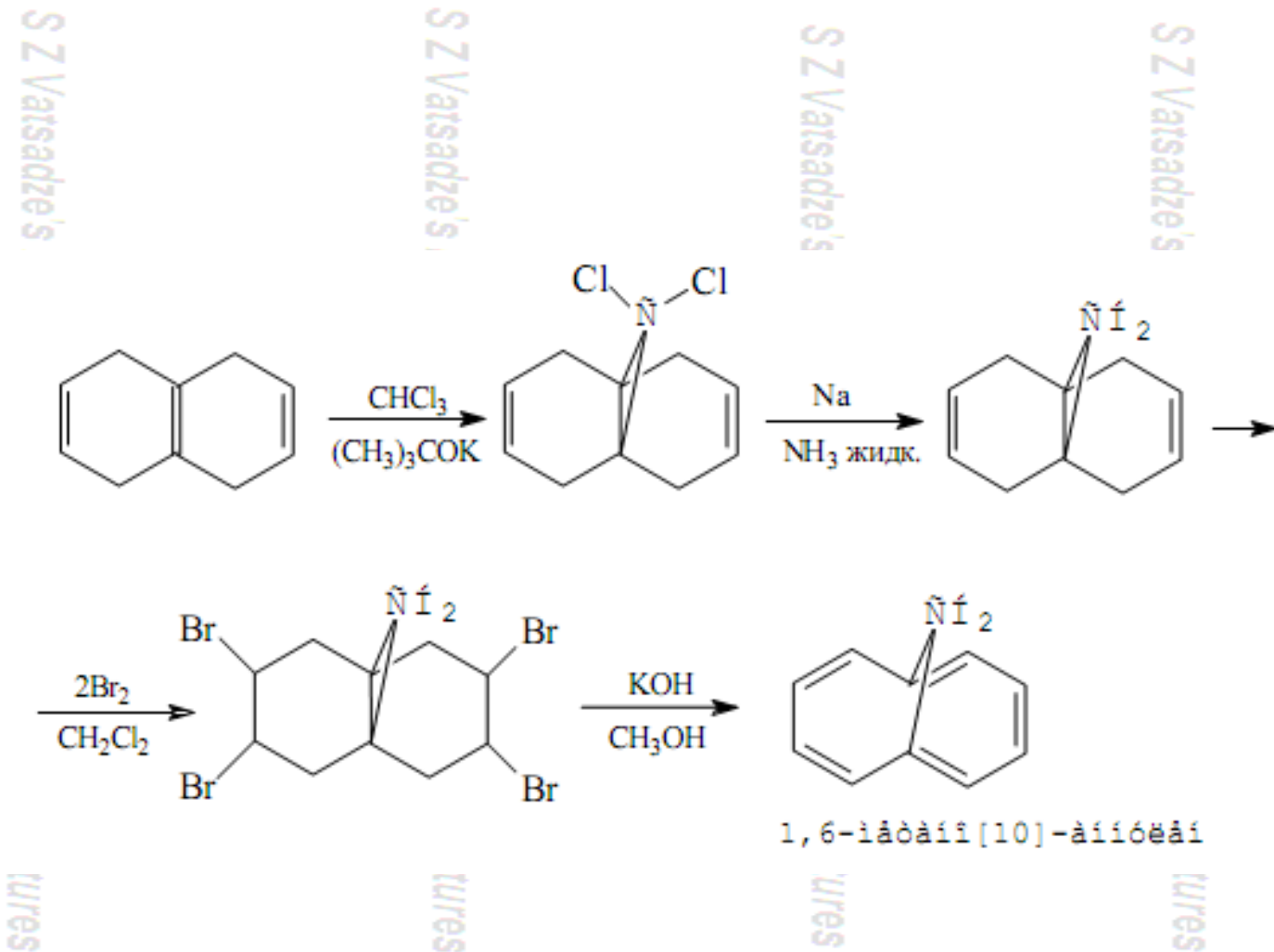


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- 10 электронов:  
Фогелевские аннулены

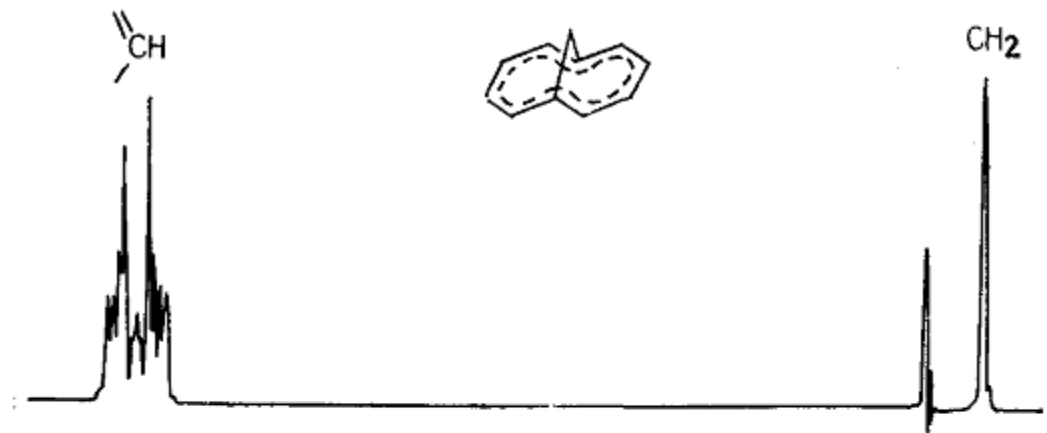


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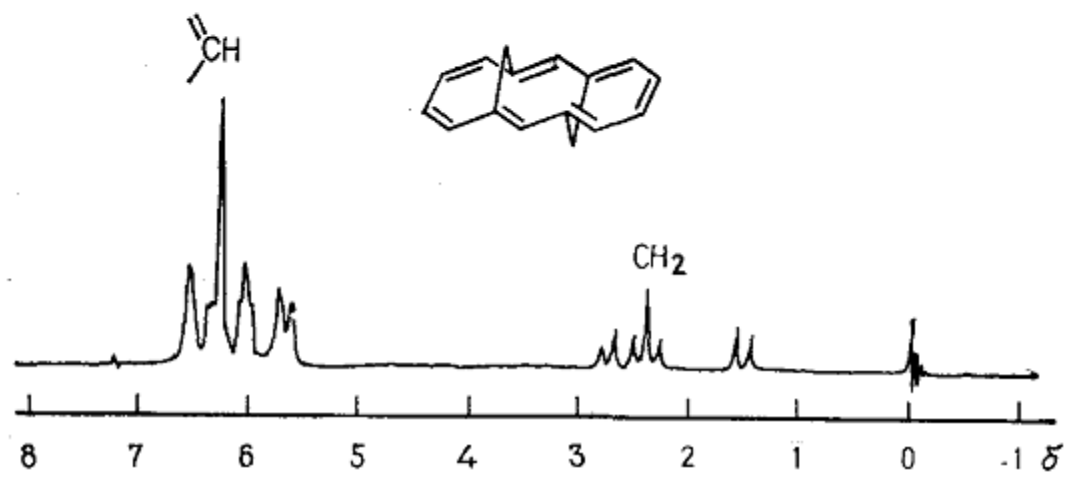
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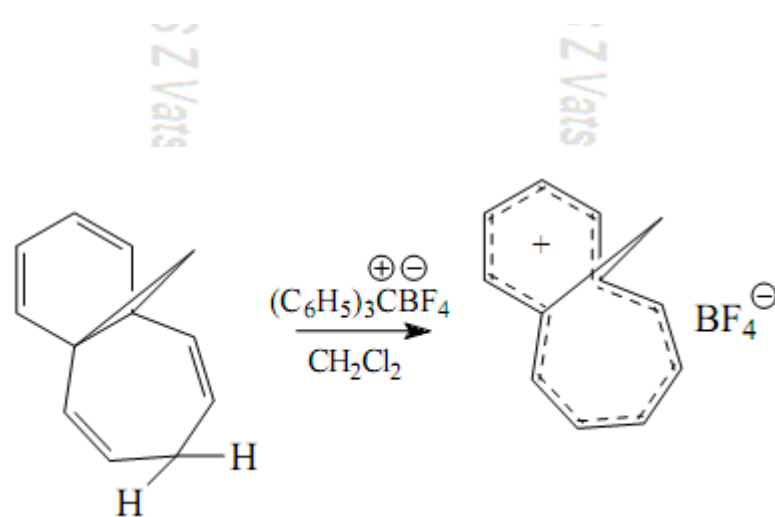
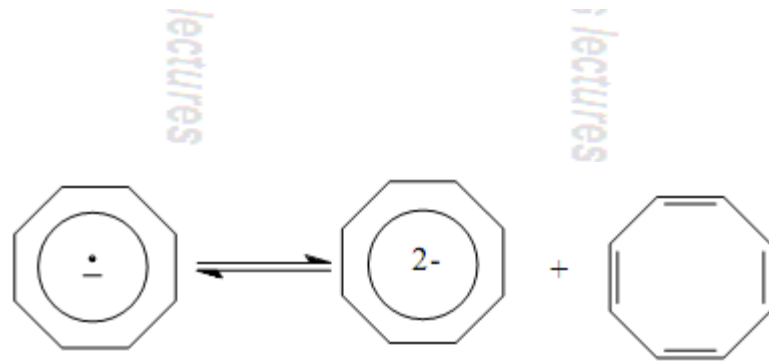
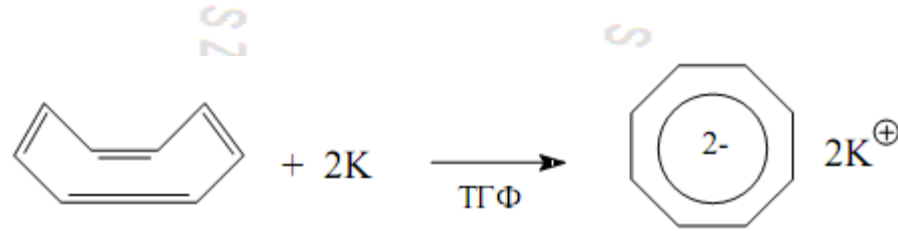


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© 7 Varsadze's lectures

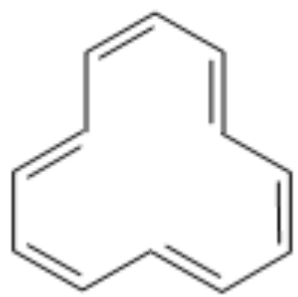


- 10 электронов



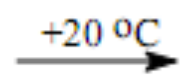
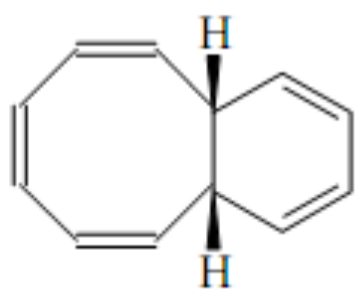
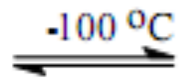
- 12 электронов

S Z Varsadze



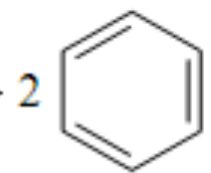
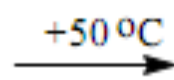
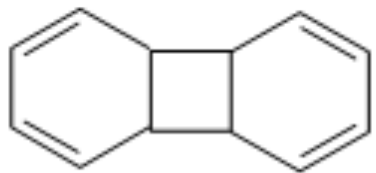
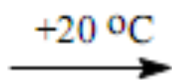
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lectures

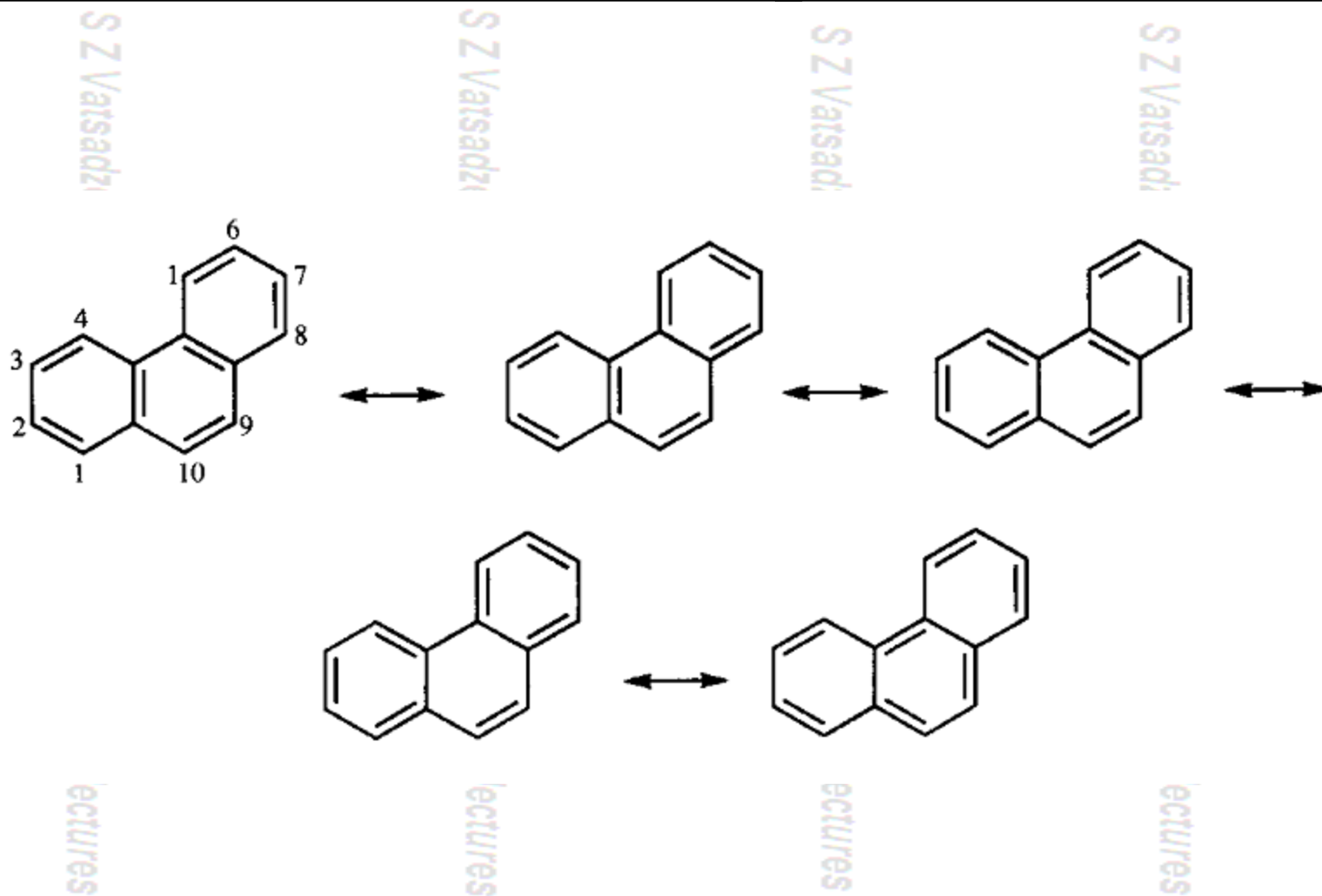
lectures

lectures

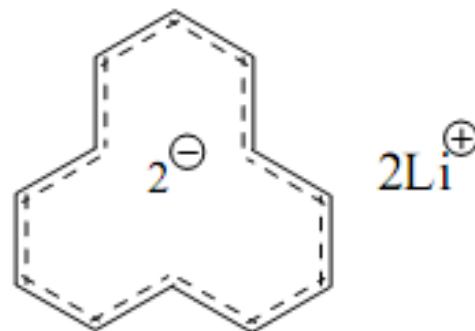
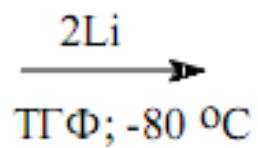
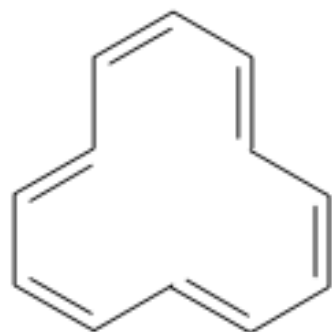
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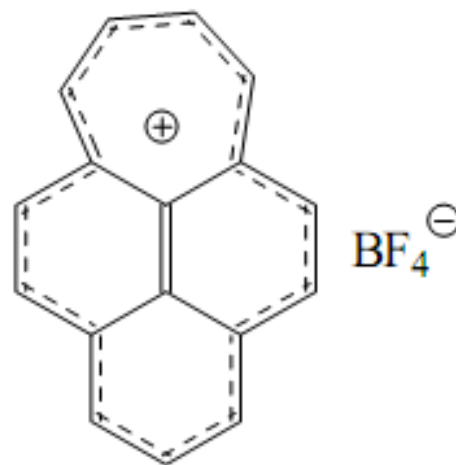
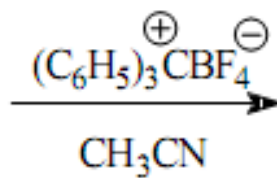
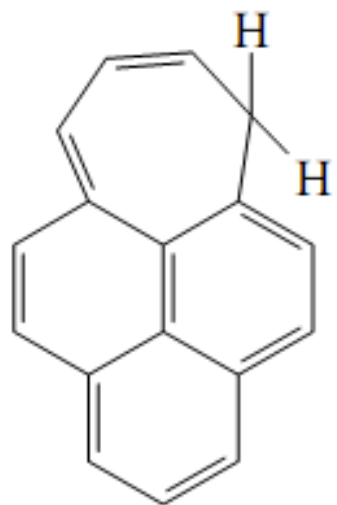
- 14 электронов ?



- 14 электронов



S Z Varsadze's lectures



- 14 электронов

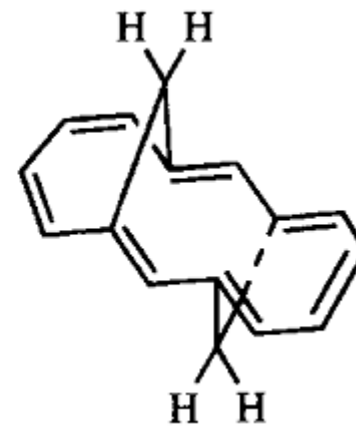
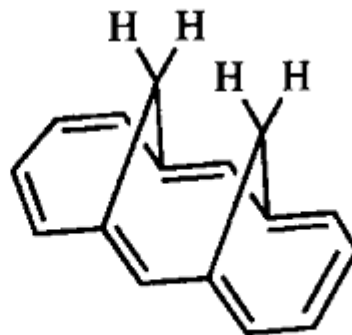
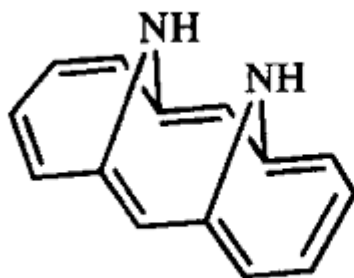
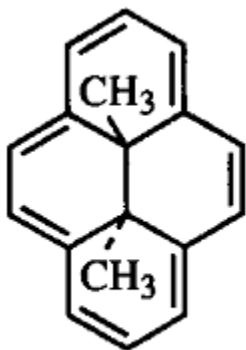
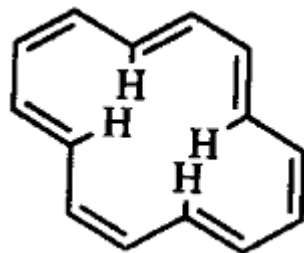
## 18. Ароматичность

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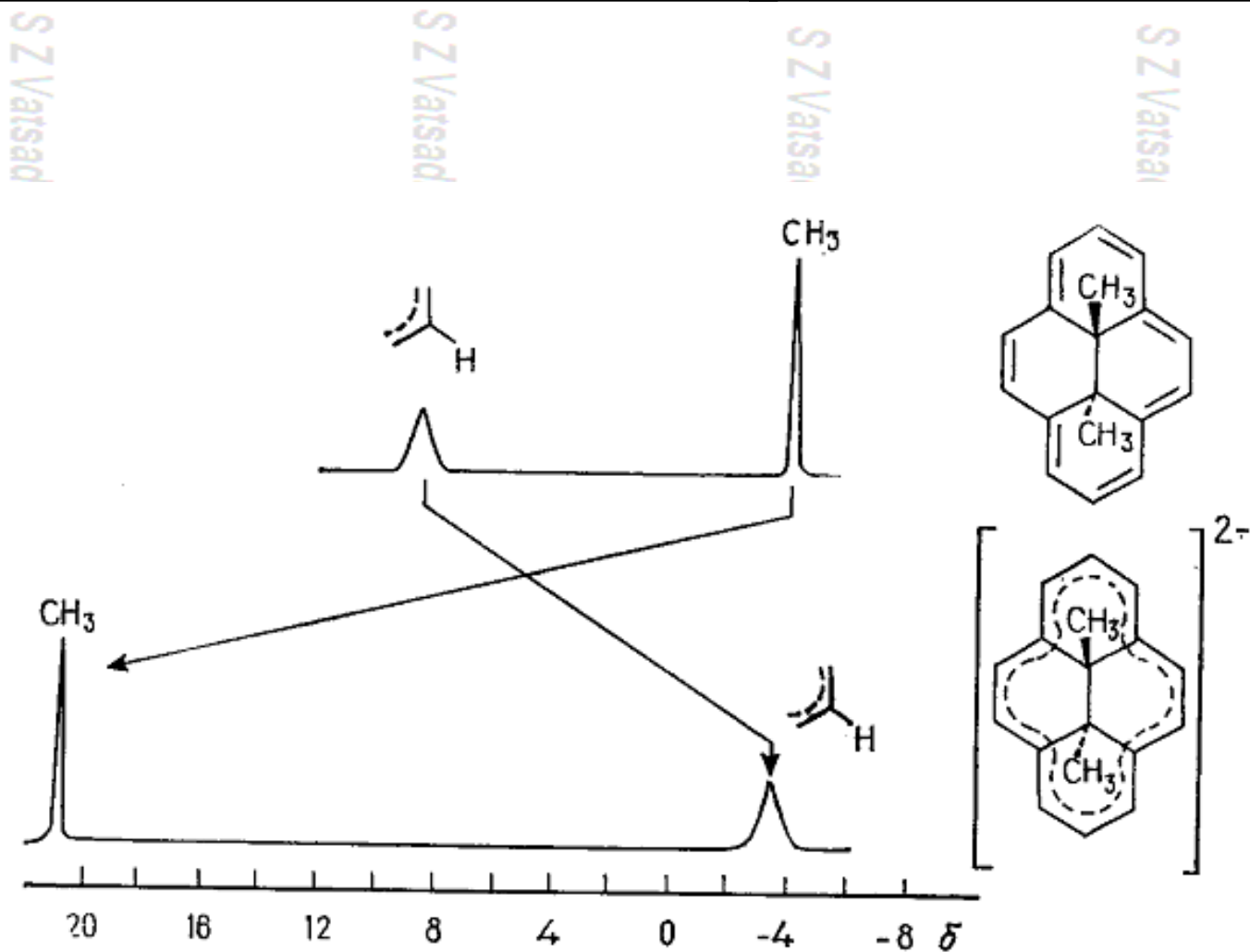
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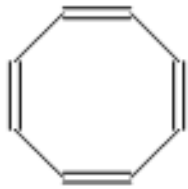


- 14 электронов vs. 16 э.

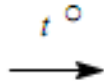


- 16 электронов

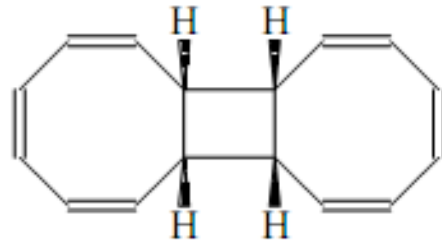
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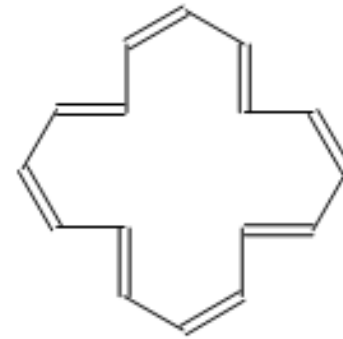
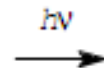


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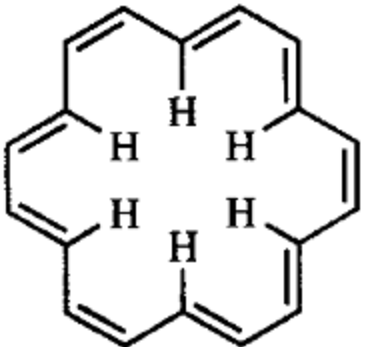
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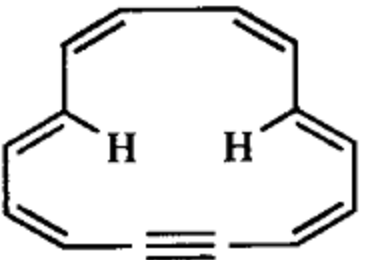
- 18 электронов

S Z Varsadze's lectures



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Varsadze's lectures

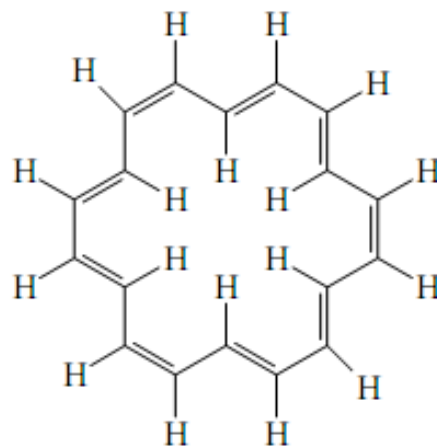
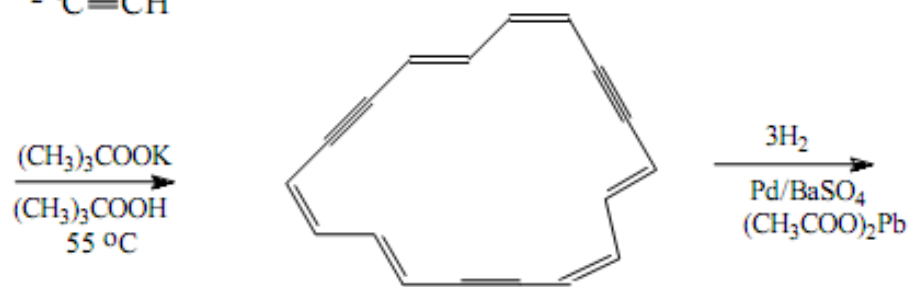
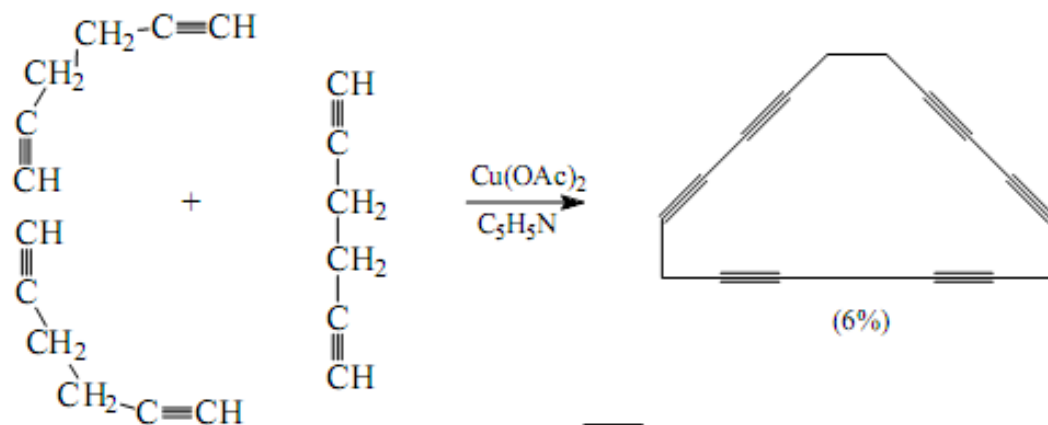
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- 18 электронов

S Z Varsadze's lectures



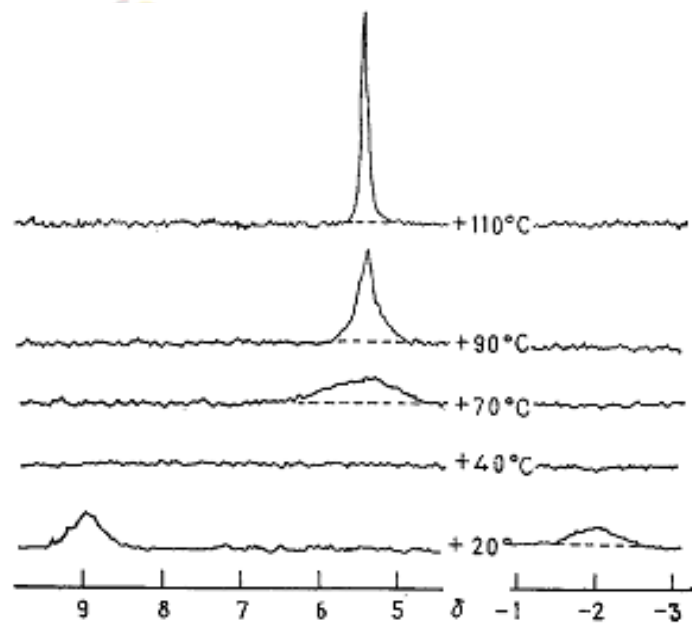
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S Z Varsadze's lectures

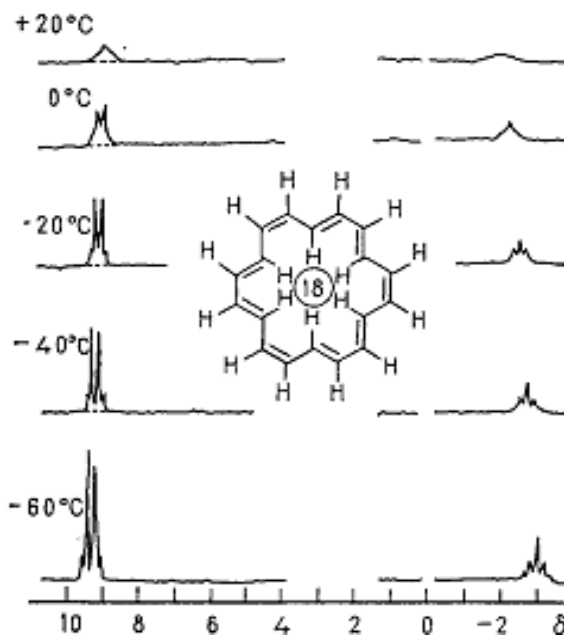
- Ароматичность

S Z Varsadze's lectures

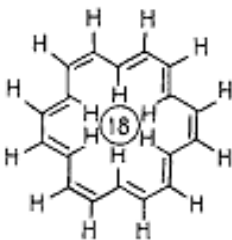


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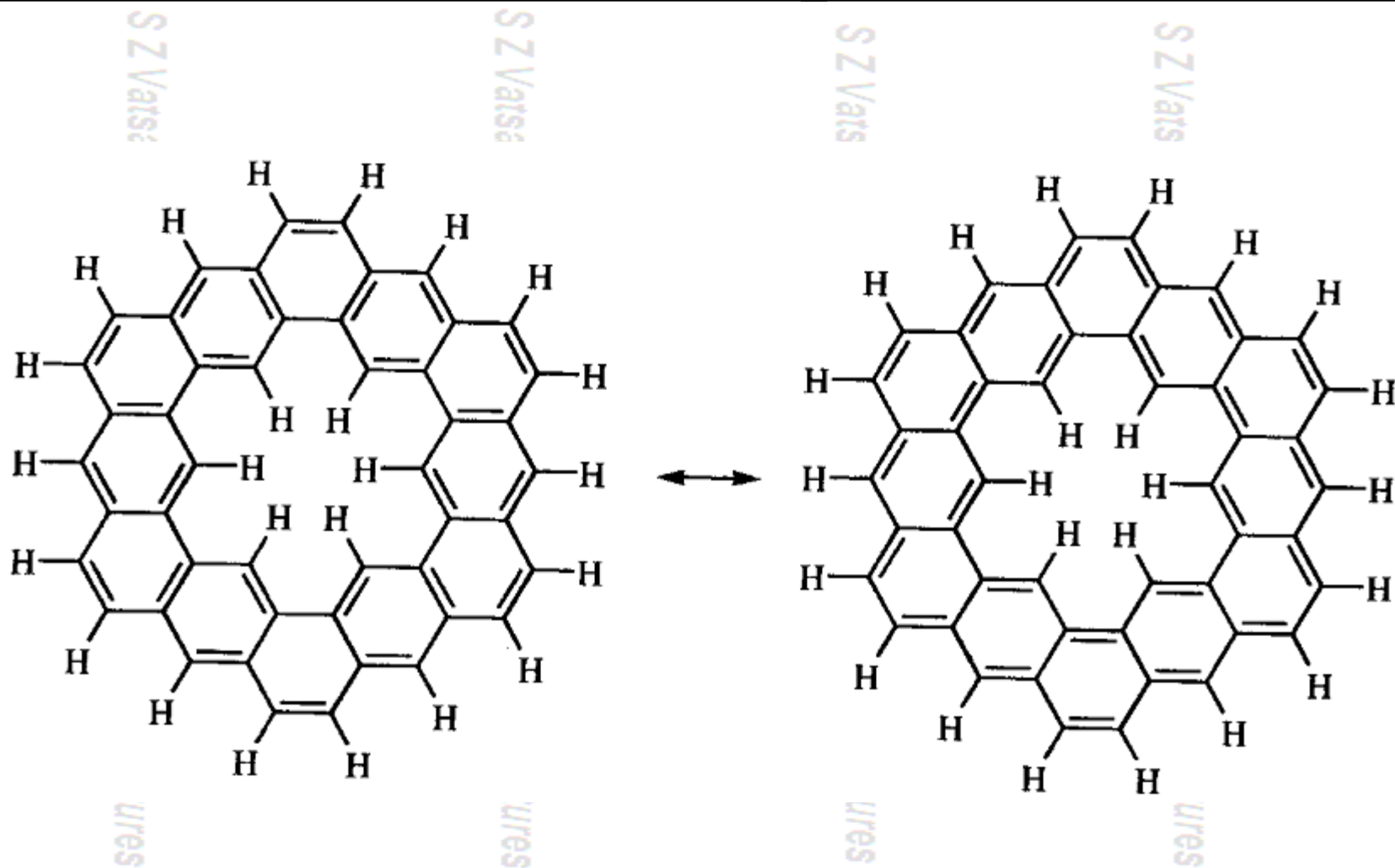


S Z Varsadze's lectures





- Кекулен - ? электронов



Протонный спектр: 7.94; 8.37; 10.45  
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