

# Nobel Prize Winners



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**MADE BY STUDENT**

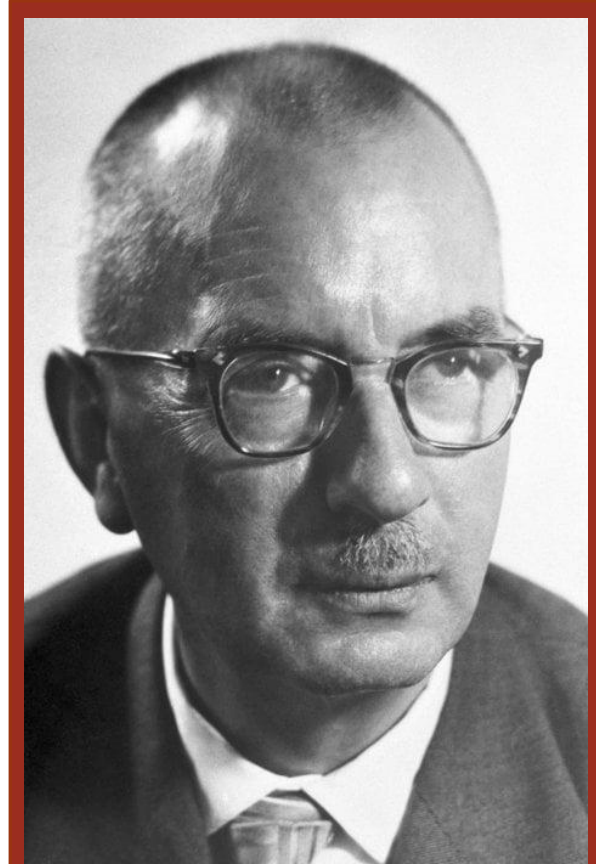
**IRINA ZOTOVA**

**4201-040301D**

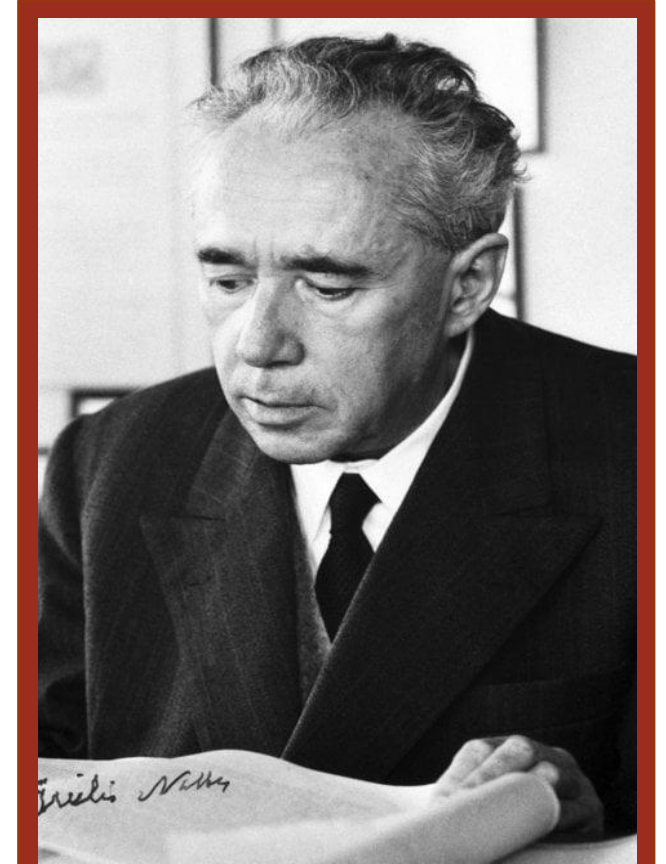
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# Karl Ziegler and Karl Ziegler

1963 was awarded jointly "for their discoveries in the field of the chemistry and technology of high polymers"



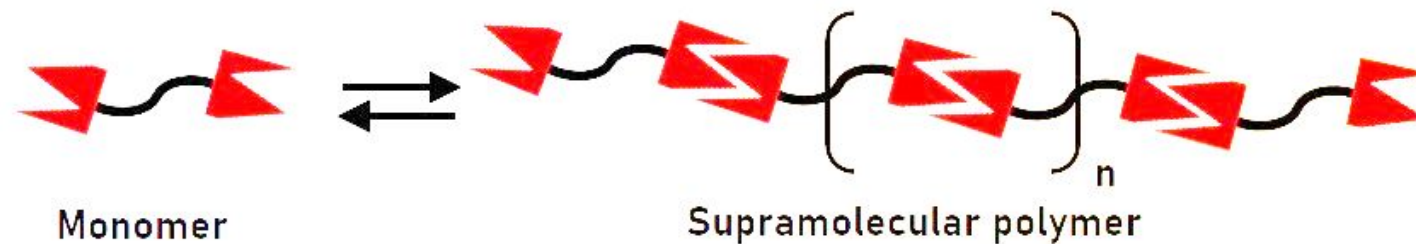
Karl Ziegler

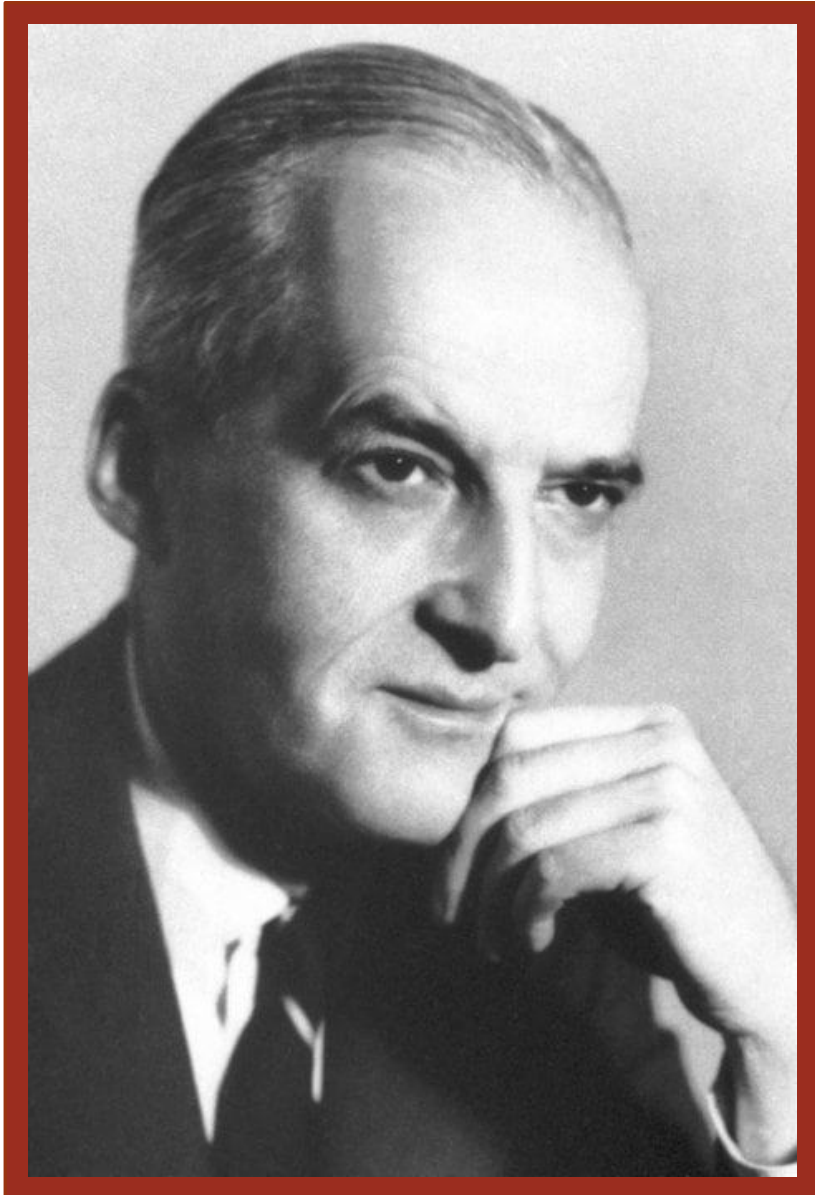


Karl Ziegler

- In 1953 Karl Ziegler developed a method for creating these molecular chains using aluminum compounds as catalysts. The aluminum's electrons are grouped so that active molecules are drawn to them and wedge themselves in between the molecular chain and the aluminum atom. Thus, the chain is lengthened step by step.

- After Karl Ziegler developed a method for creating these molecular chains using catalysts. Giulio Natta developed it further. In 1955 he discovered a catalyst that formed molecular chains with their parts oriented in certain directions. This made it possible to produce rubbery and textile-like materials.





## Luis F. Leloir

Prize in Chemistry  
1970 "for his  
discovery of sugar  
nucleotides and  
their role in the  
biosynthesis of  
carbohydrates"

Luis Leloir demonstrated that nucleotides—molecules that also constitute the building blocks of DNA molecules—are crucial when carbohydrates are generated and converted. In 1949 Leloir discovered that one type of sugar's conversion to another depends on a molecule that consists of a nucleotide and a type of sugar. He later showed that the generation of carbohydrates is not an inversion of metabolism, as had been assumed previously, but processes with other steps.



## Robert S. Mulliken

in Chemistry 1966  
"for his fundamental  
work concerning  
chemical bonds and  
the electronic  
structure of  
molecules by the  
molecular orbital  
method"

