



2023 Nobel Prize in Physics: Overview, Status, and Future

Dr. Syed Ali Hussain

[A former colleague of 2023
Physics Nobel Laureate]

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Title: **2023 Nobel Prize in Physics: Overview, Status, and Future**

By: **Syed Ali Hussain** [a former colleague of 2023 Physics Nobel Laureate]

Abstract:

The 2023 Nobel Prize in Physics was awarded to three distinguished scientists: Pierre Agostini (USA), Ferenc Krausz (Germany), and Anne L'Huillier (Sweden). Their groundbreaking research has provided us with innovative tools for delving into the realm of electrons within atoms and molecules. Their primary focus lay in generating attosecond ($1 \text{ as} = 10^{-18} \text{ sec}$) pulses of light, pioneering novel techniques for their control and detection.

In the group of Ferenc Krausz, during my PhD, we developed an innovative spectroscopic technique, Field-Resolved Molecular Fingerprint Detection. This technique has been acknowledged as a promising avenue for future scientific advancements, as highlighted in the Nobel Prize press announcement and briefing.

Introduction (Dr. Syed Ali Hussain)

He holds academic distinctions throughout his academic career. He worked along with the 2023 Physics Nobel Prize winner, Ferenc Krausz for seven years, in the Laboratory for Attosecond Physics at Max Planck Institute of Quantum Optics, Germany. He got his Ph.D. degree with distinction 'magna-cum-laude' from Ludwig-Maximilian University Munich. His PhD work on the development of Laser-based molecular fingerprinting technology was also recognized as a future scientific benefit in the Nobel Prize press announcement and official briefing.

In this talk he will give an overview on the 2023 Nobel Prize in Physics and his contributions related to this work.