THE NOBEL PRIZE

CHEMISTRY PRIZE 2023

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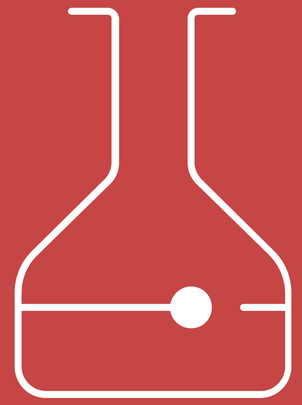
They added colour to nanotechnology



Nobel Prize lessons

The Nobel Prize in Chemistry

"to the person who made the most important chemical discovery or improvement"

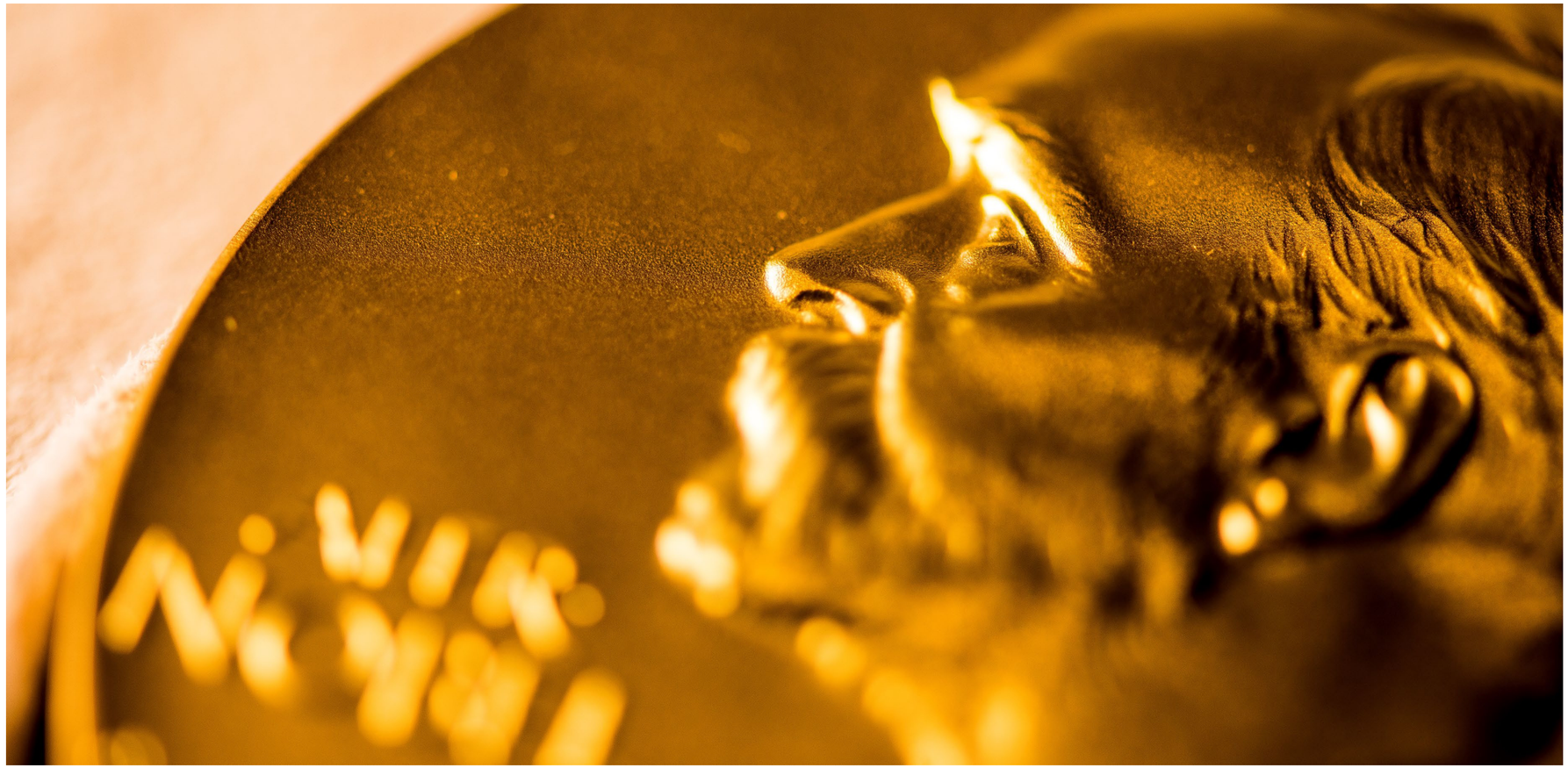
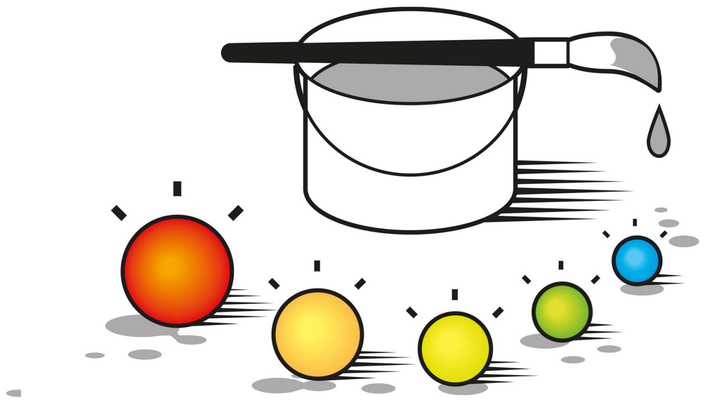


PHOTO: ALEXANDER MAHMOUD

Chemistry prize 2023



The 2023 Nobel Prize in Chemistry rewards the discovery and development of quantum dots, which have made possible new ways of creating coloured light.

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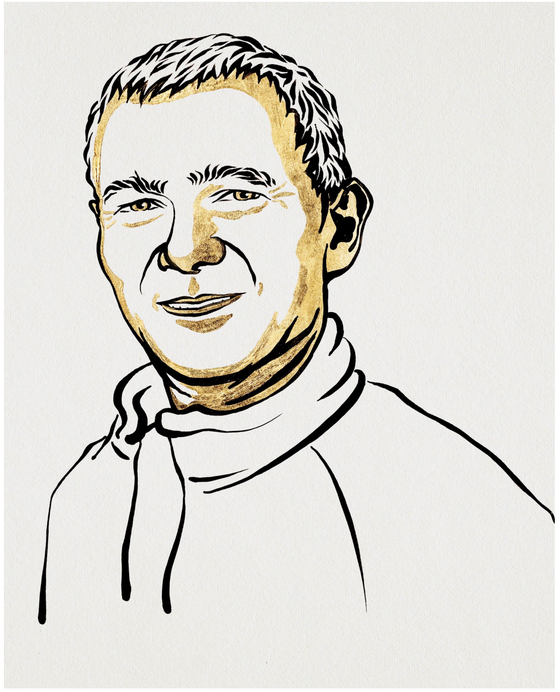
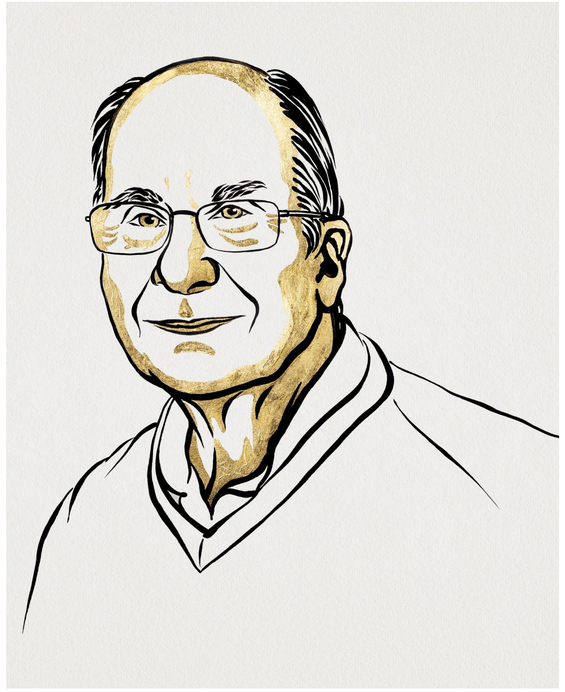
2023 chemistry laureates

"for the discovery and synthesis of quantum dots"



Moungi G. Bawendi
Born: 1961, France



Louis E. Brus
Born: 1943, USA

Aleksey Yekimov
Born: 1945, former USSR

ILL. NIKLAS ELMEHED © NOBEL PRIZE OUTREACH

How small is a quantum dot?

You could fit as many quantum dots inside a football as you could fit footballs inside the earth.

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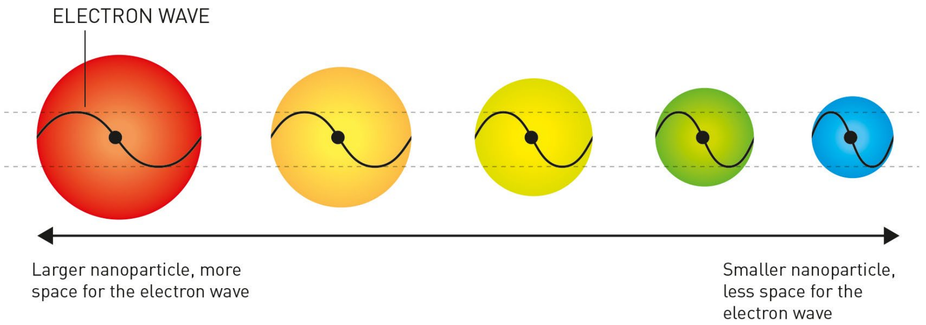
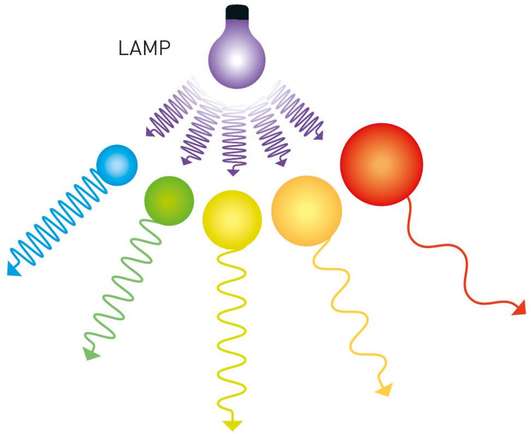
Quantum effects arise when particles shrink





When particles are only a few nanometres in diameter, the space available for electrons is very limited. That affects the optical attributes of the particle.

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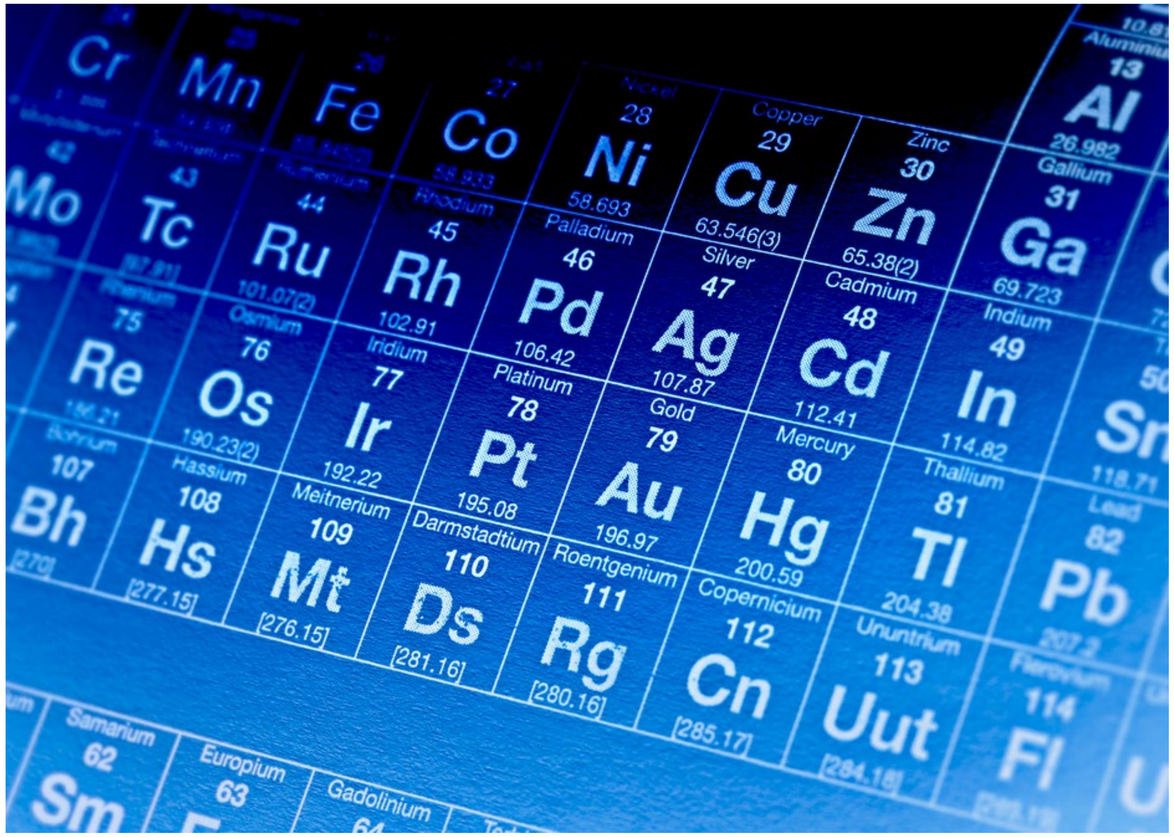
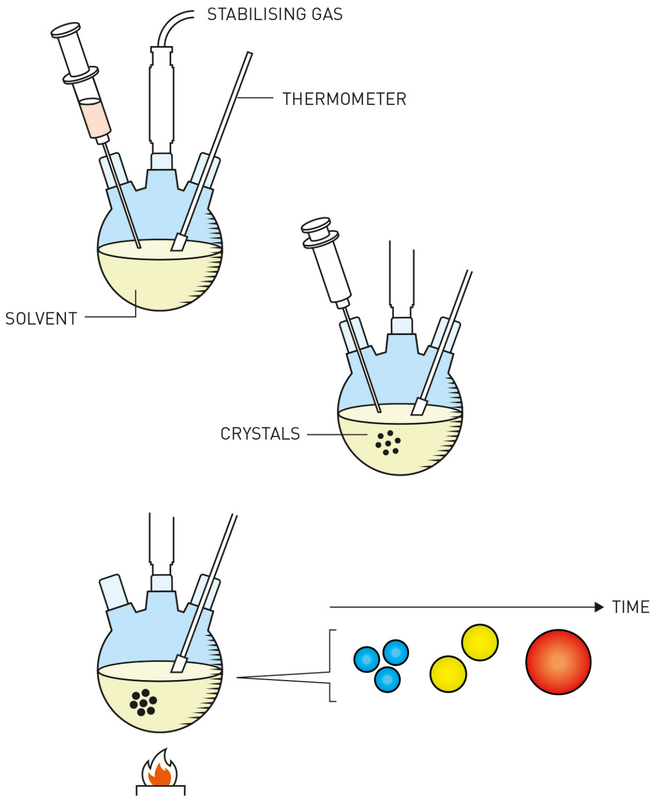
The periodic table’s third dimension



The discovery of quantum dots’ optical properties was like suddenly finding that the periodic table had a third dimension.

Revolutionising the production of quantum dots



Solvent and temperature affected the surface structure and size of quantum dots.

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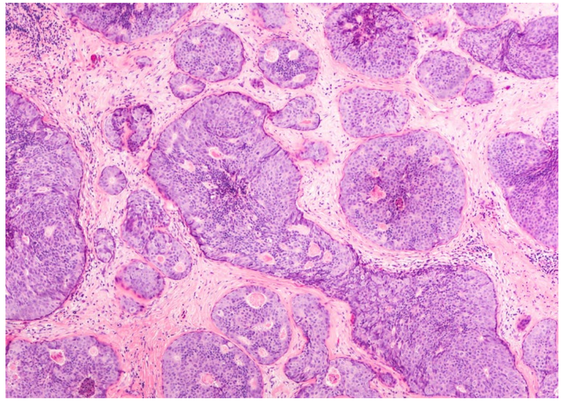
For the greatest benefit to humankind

Quantum dots spread their light from television screens and LED light bulbs. They catalyse chemical reactions, and their clear light can illuminate tumours for a surgeon.



COURTESY OF COLUMBIA UNIVERSITY

“This is a collaborative effort”

Louis E. Brus, Nobelpristagare i kemi 2023

THE
NOBEL
PRIZE

FOR THE GREATEST BENEFIT TO HUMANKIND

Nobel Prize lessons