
1922
Schrödinger is in a period of reflection
Until ...
I found the fundamental equation for quantum physics by describing the time evolution of a massive non-relativistic particle
Is it really so hard to understand?

$$\left(-\frac{\hbar^2}{2m}\nabla^2 + V\right)\psi = i\hbar\frac{\partial}{\partial t}\psi$$

Here is the equation; the goal is to find PSI

the equation tells us about
the shape of PSI
and how it evolves in time

$\hbar = 1{,}054571628 \times 10^{-34}\ \text{J.sec}$

H bar is a constant equal to this number

the Laplacian is linked
to the curvature of PSI

m represents
the mass of a quantum object;
2m is just twice the mass

i

i is a complex number

It's complicated ...

$\frac{\partial}{\partial t}$

this derivative is linked
to the time variation of PSI

V represents potentials; for example if the object :

feels a force

feels electricity or not

feels gravity

WITH THIS EQUATION,
PHYSICISTS ARE ABLE
TO PREDICT VERY WEIRD BEHAVIORS

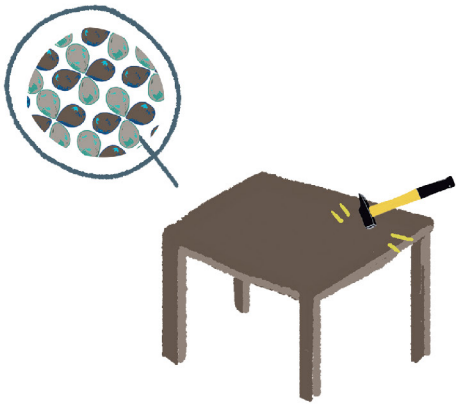
...

a quantum object is allowed
to have only quantized energies

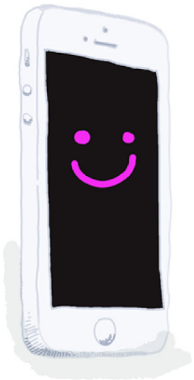
a quantum object can be
in two states at a time

a quantum object can be
a particle or a wave

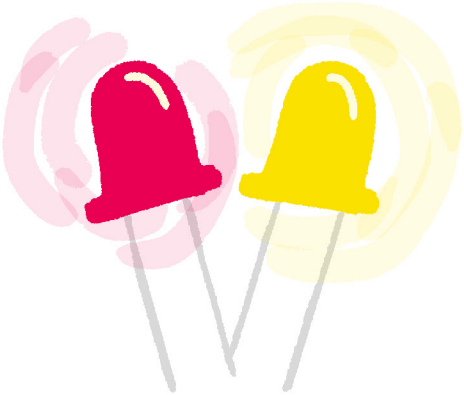
this equation allowed us to understand
why objects are solid, due to the nature of atoms



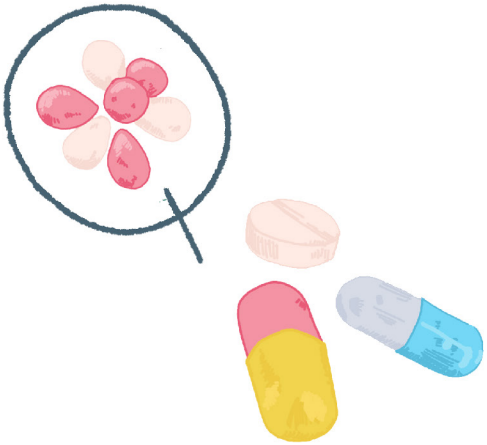
invent the transistor,
and thus almost all electronic devices



invent the laser and LEDs



create molecules for medicine



but more importantly,
this is what won him
the Nobel prize in 1933