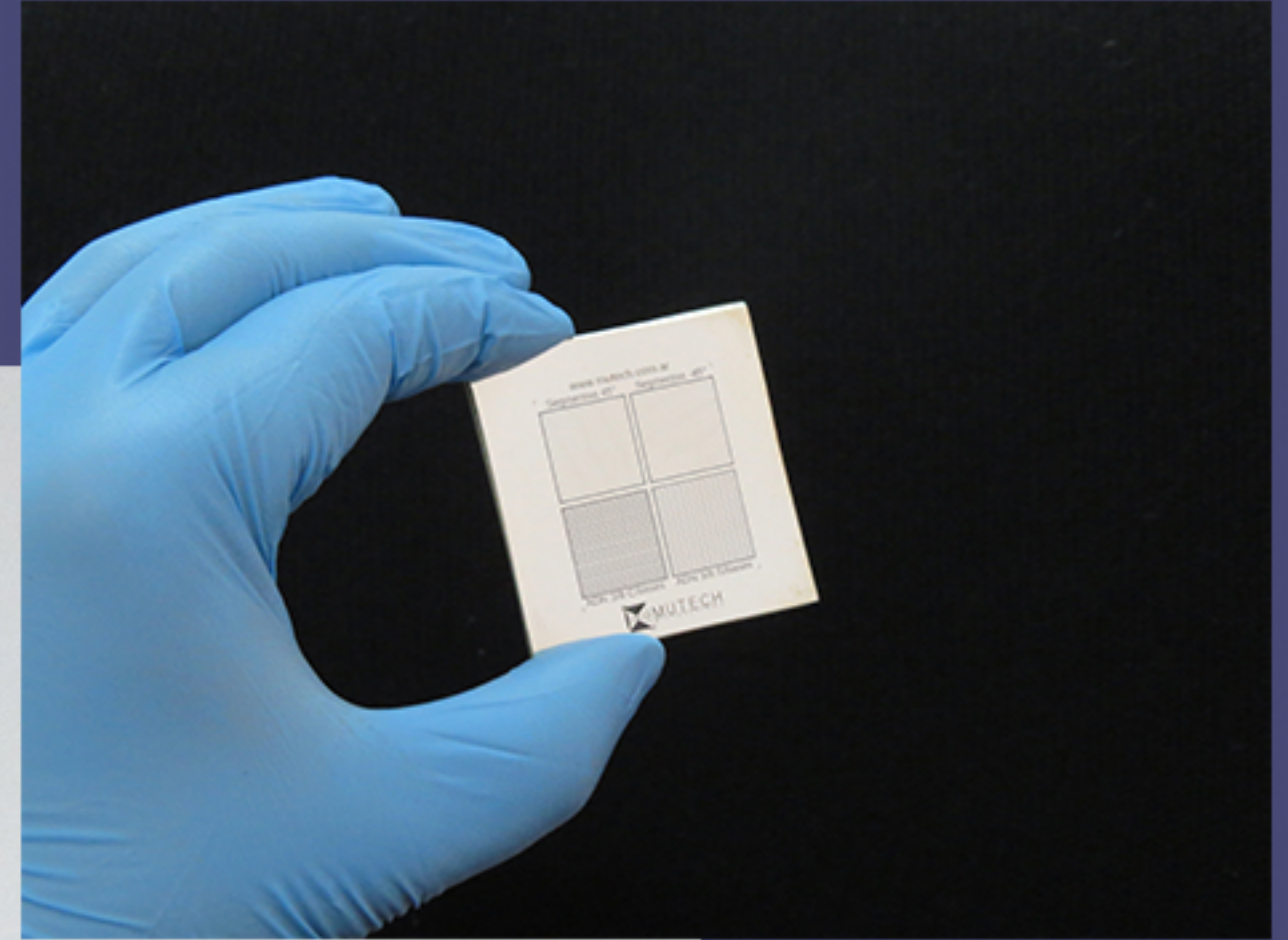


# Diffraction gratings



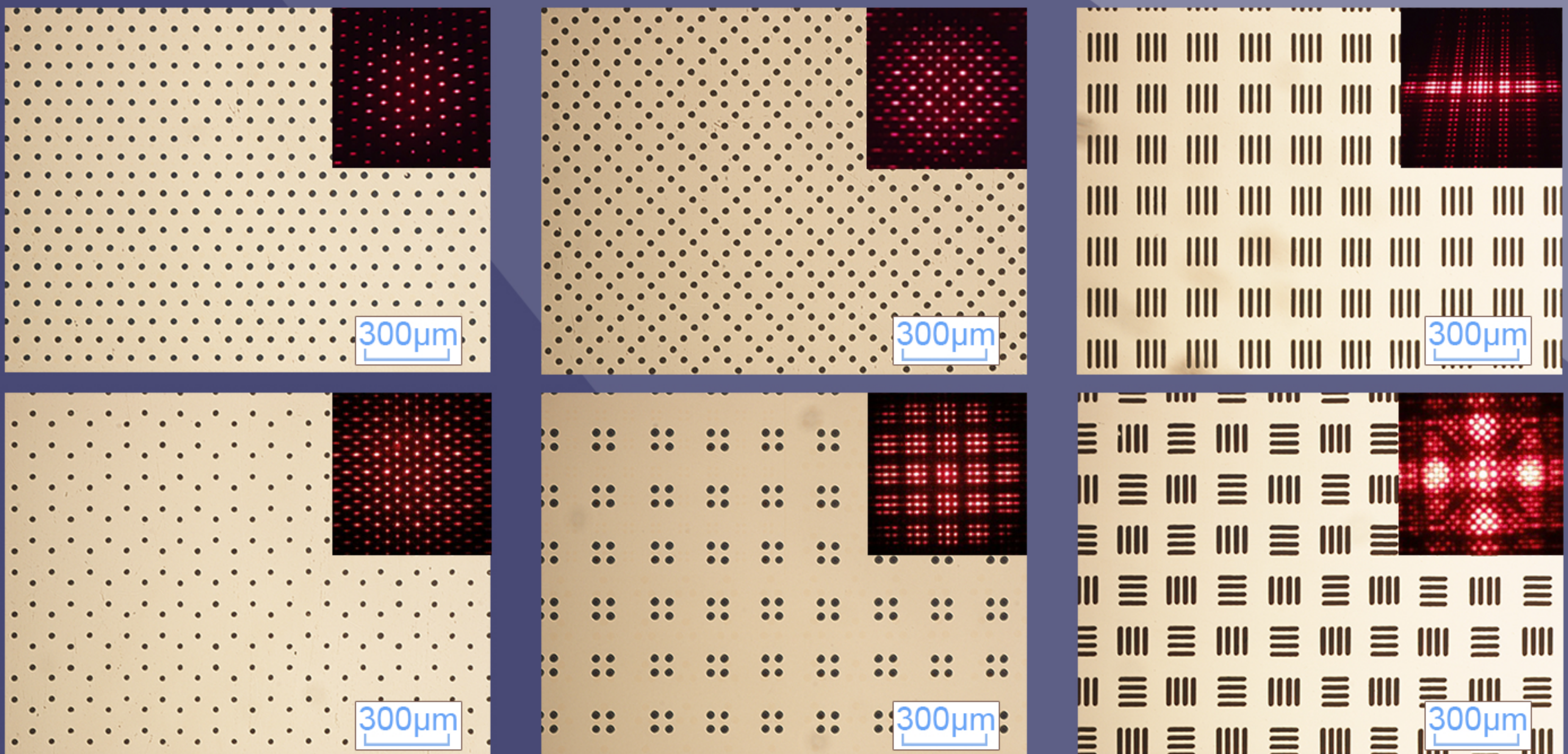
## The product

The diffraction kit consists of 10 high quality chromium glass masks with 4 different diffraction gratings in each one. The diffraction gratings are made using optical lithography with  $0.8\ \mu\text{m}$  resolution. The masks are packaged in a special box that facilitates handling and care for the students.

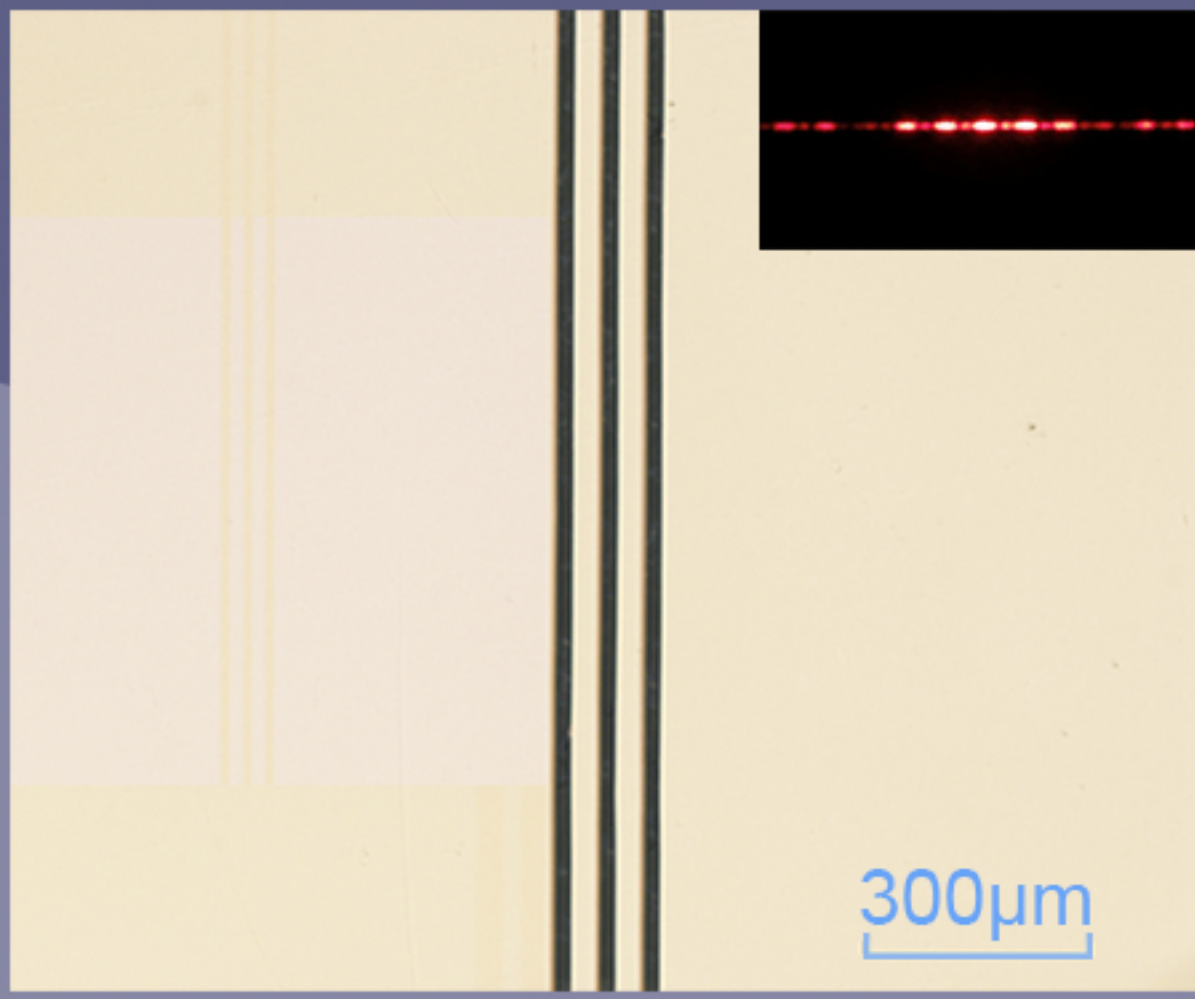
Diffraction patterns in the kit are designed to guide the student step by step for the different aspects of optic diffraction and interference effects.

- The kit contains single and multiple slits diffraction patterns (up to 4 slits).
- “N” slit diffraction gratings, one dimensional and two dimensional.
- Diffraction gratings with structure factor.
- Complex diffraction gratings for a more advanced analysis.

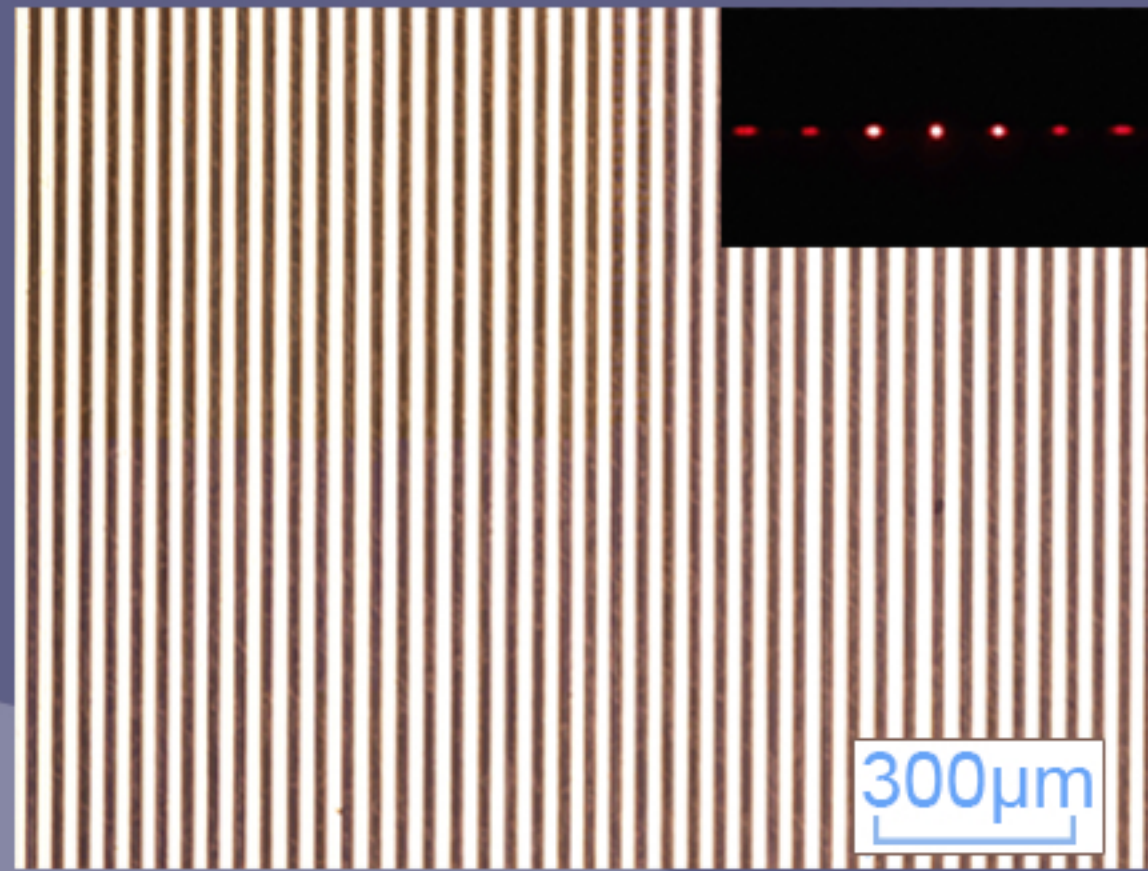
## Some examples



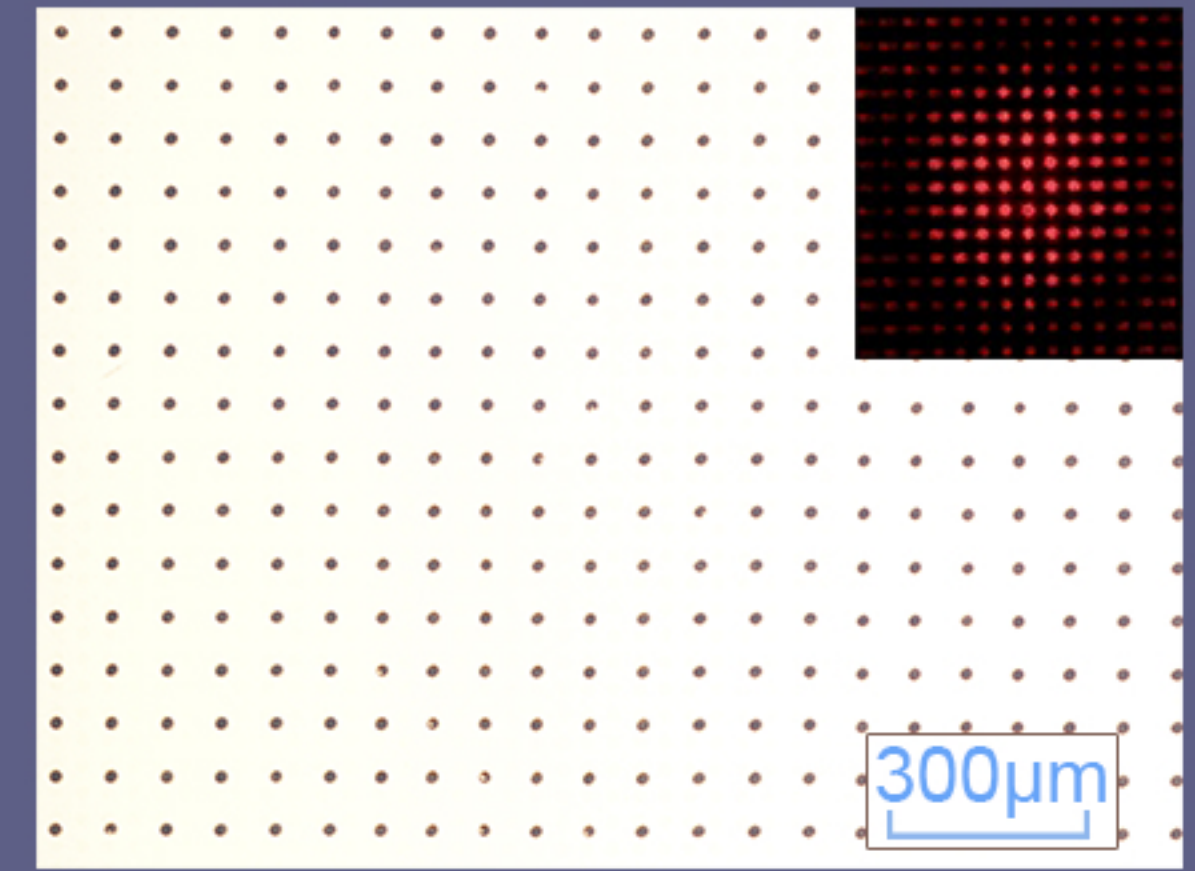
*Bi-dimensional diffraction gratings are designed to introduce the student to the use of X-Ray diffraction to analyze the structure of crystalline solids. The kit presents different “crystalline structures” (squares, triangular and graphene-like structures) and special gratings to study the influence of the structure factor in structures with a base.*



3 slit diffraction pattern.

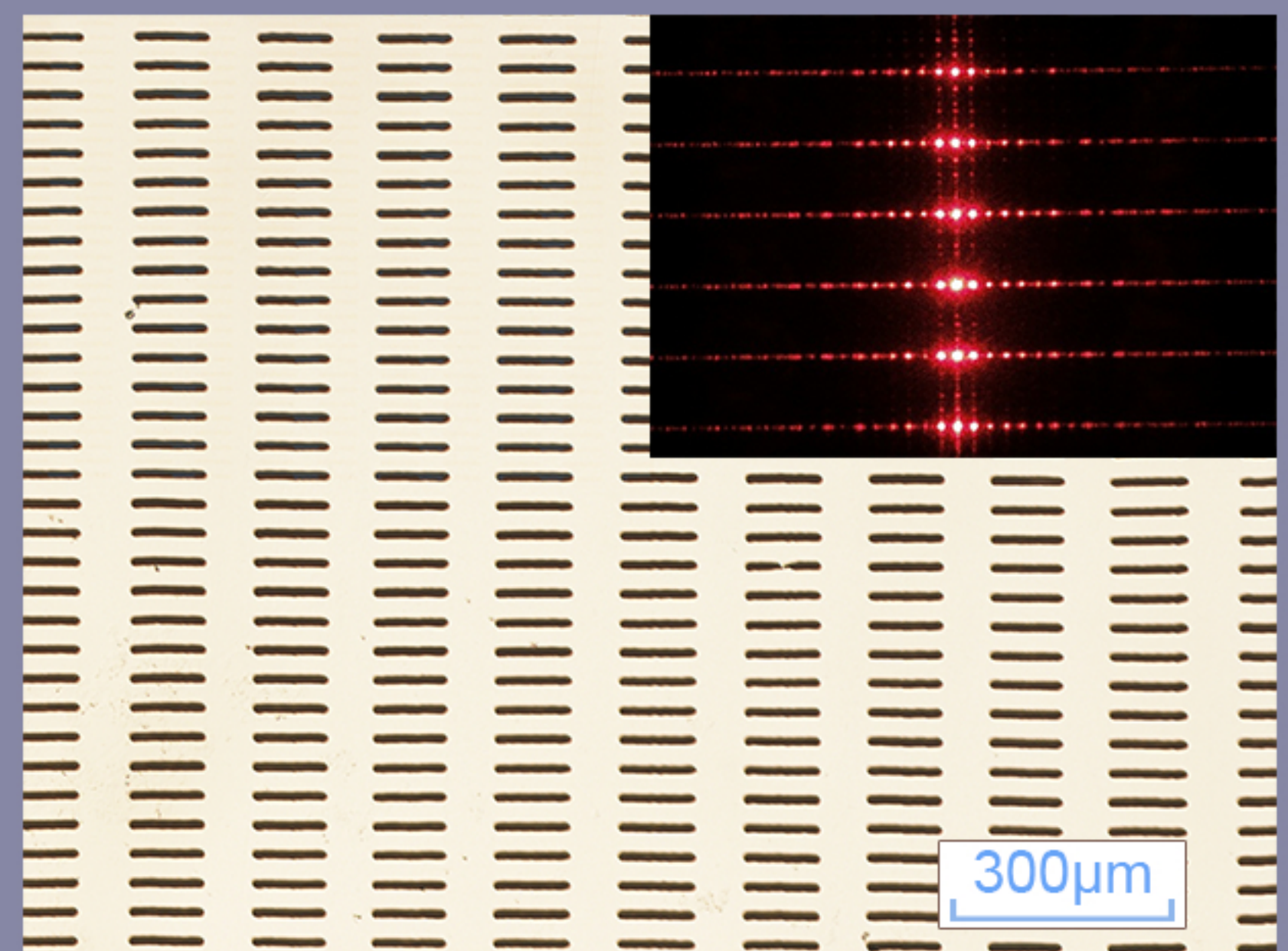


"N" slits diffraction gratings going from one dimensional to two dimensional patterns.

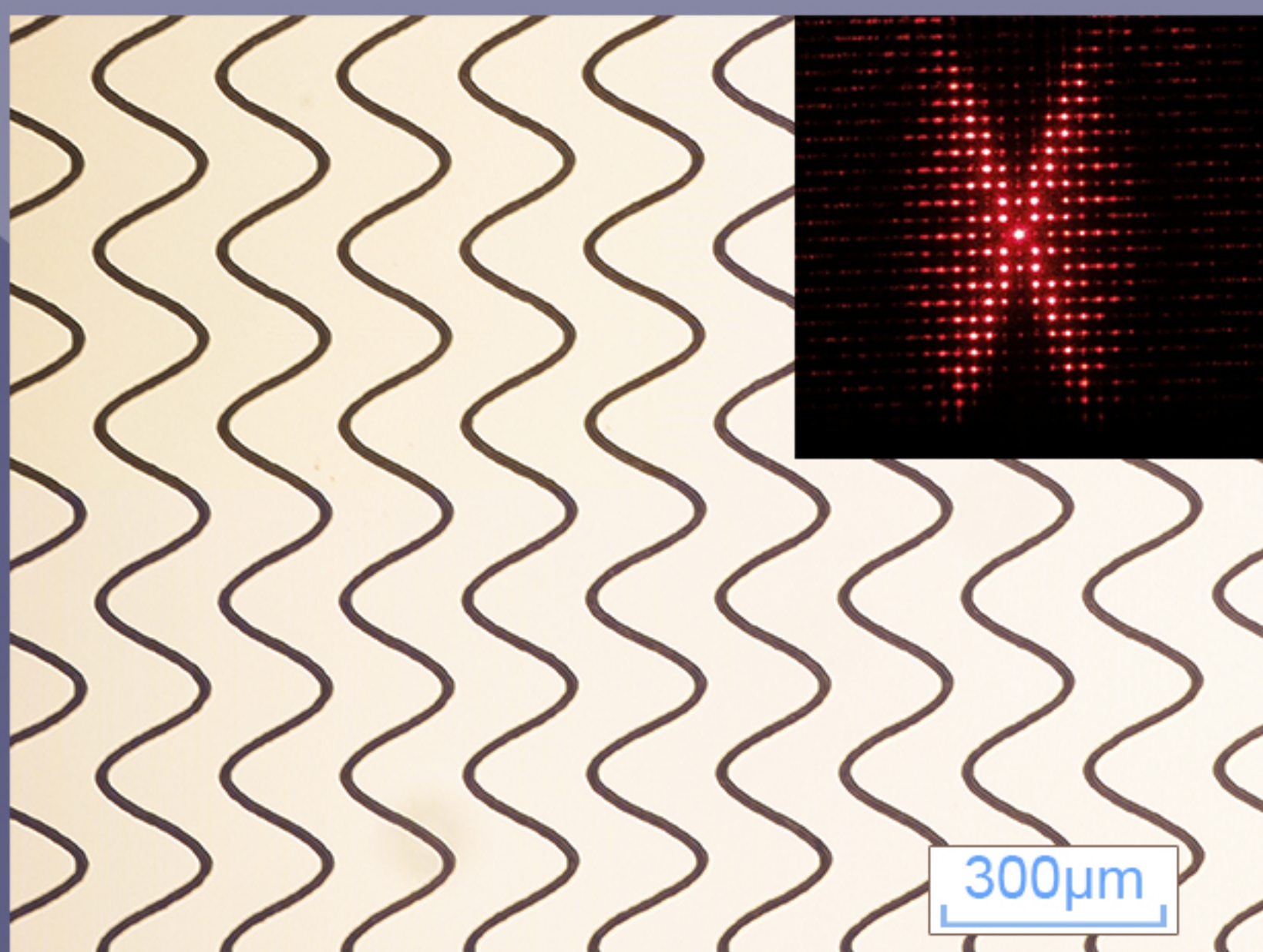


## DNA experience

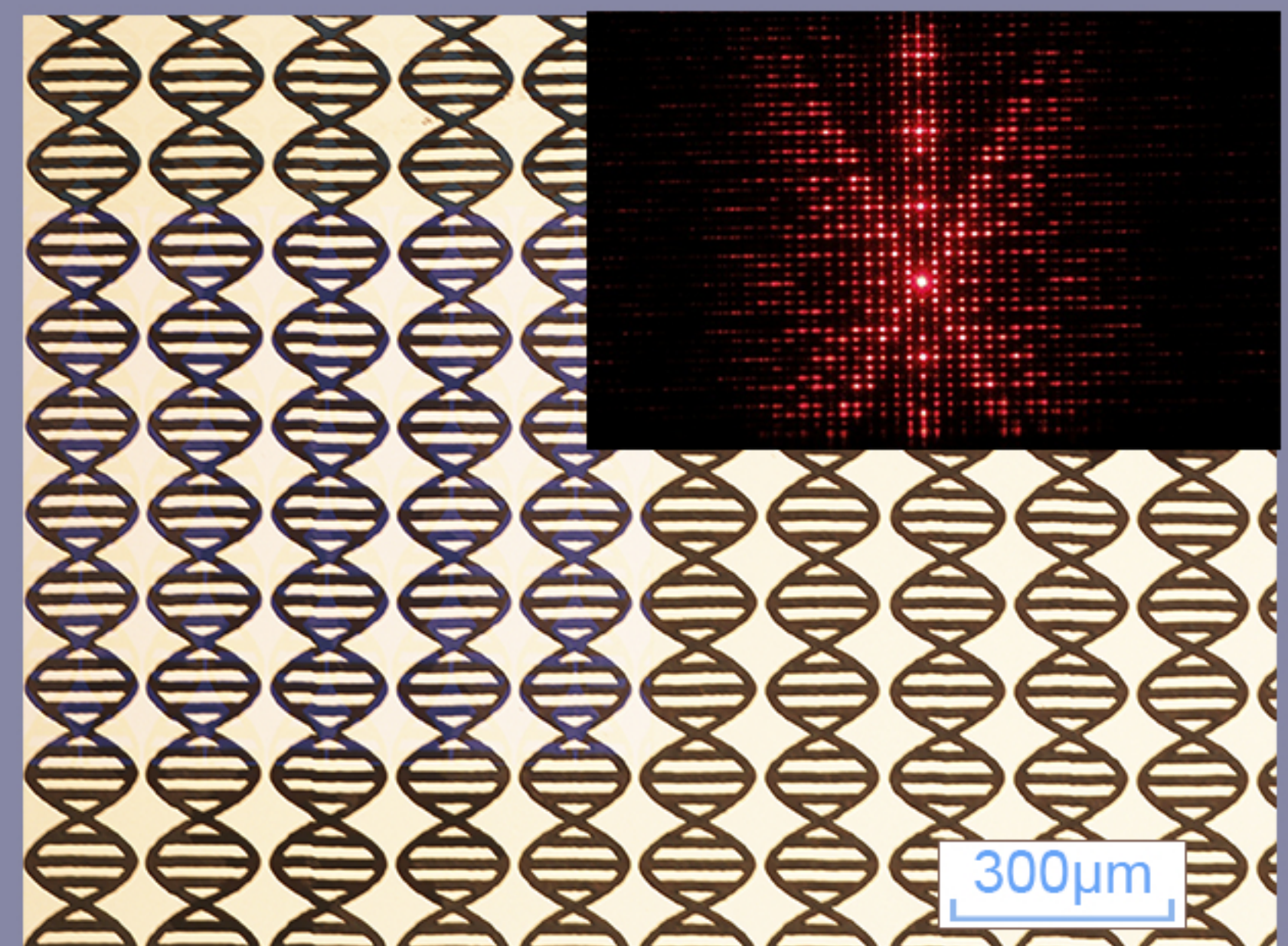
The kit presents different diffraction patterns to understand and reproduce at the optic scale, the experience done by Rosalind Franklin that helped to decoy the DNA structure by James Watson and Francis Crick. An array of diffraction gratings with the different elements in the DNA structure and with different characteristic lengths allows understanding the phenomena qualitatively with the possibility to do some interesting quantitative analysis.



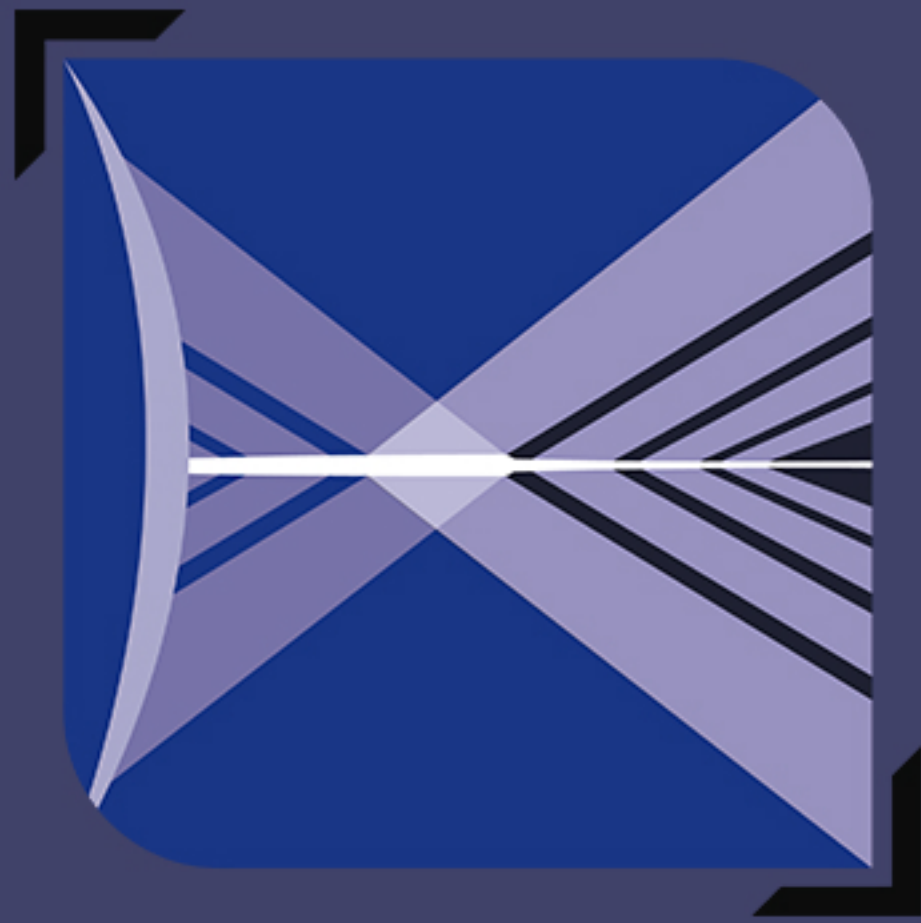
DNA steps with different configurations and characteristics distances.



Diffraction patterns with periodic chains changing amplitude and frequency of the wave.



Two dimensional chains with different configuration that resembles the DNA.



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