The four Elements: an Experiment of chemistry and Music

While notes create precious harmonies and melodies, the chemical elements react spectacularly, harmonizing with the music and producing pleasant contaminations and synaesthesia.

Each new reaction is a symphony of elements, and each new music is an alchemy of notes!

The unusual show, with a STEAM approach, aims to defeat chemophobic prejudices that alienate young people from chemistry through the charm of chemical reactivity in an artistic setting. Why mix music and chemistry? They share a lot: creativity. Just as the musician uses the 12 notes to write or interpret new music, the chemist continuously develops precious materials with the 118 elements of the periodic table.

In common parlance, art and technique belong to different categories, usually antithetical. The show highlights the artistic nature of the technique, as the etymology of the word suggests (from the Greek τεχνη, art). Music is a universal language like chemistry, and both need the ordered contribution of many, respecting times and methods.

The show offers pleasant synaesthesia. The four Aristotelian "elements" are the object of this experiment in the frame of the Platonic solids associated with them.

Chemists and musicians, actors of this unusual experiment, explain the spectacular chemical reactivity and the entangled music.

The performance starts in absolute darkness with water that glows with chemical light thanks to the chemiluminescence of the luminol. The luminous rain interprets and stages Leo Brouwer's "Cuban landscape with rain" (1984) from the first drops to the storm until the return of the initial quiet.

The drops of water light up, to the rhythm of the guitars, inside a tube that fills containers as if they were bright puddles, next to an icosahedron, the symbol of water; then the music and the flow intensify; slowly, the rain fades like the music and the light effect.

The show continues with the representation of Air. In Dvorak's Cavatina the notes flow like the flow of the wind. The chemists bring the audience into contact with the three main components of the Air: liquid nitrogen is poured in a dance, oxygen is developed in a chemical reaction, and carbon dioxide of dry ice creates heavy and icy bubbles with bizarre behaviour. The produced Air vibrates with the soundwaves and flows in the octahedron, the Platonic solid associated with Air.

We then show the Fire, or rather a rainbow of fires due to the excitation of various metal atoms by the flame inside a tetrahedron, which is the Platonic solid associated with it. The saxophonists envelop the chemical rainbow (made thanks to copper, borates, sodium, strontium, lithium, potassium, barium, and calcium) with the notes of Over the Rainbow (E.Y. Harburg, 1939).

In low light, a percussionist intertwines the complex and ancestral rhythms of Meditation n. 1 of Cangelosi to a show of chemical volcanoes that erupt lava and lapilli inside a cube, the Platonic solid associated with the Earth; tribal rhythms and ancestral geological phenomena such as the volcanic eruption represent the Earth.

The show continues with the reactions of the 7 metals associated with the 7 Aristotelian Heavens and ends with a reflection on beauty.

CREDITI

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