

The colours of chemistry: There's a new scent in the air, or old perchance?

Sergio Palazzi

*ISIS di Setificio "Paolo Carcano", via Castelnuovo 3, 22100 Como
E-mail: sergio@kemia.it*

Chemistry often has a weak appeal for students both in general and scientific courses. As it has been stressed along "2011 IYC", there is the urge to change such perceptions and prejudices, and the easiest way is to let young people understand how much both the quality of their lifestyle and their expectations for a better future on this planet are relying on chemistry.

Chemistry is intrinsically creative and fun, just as it was when, in the same years and from different perspectives, Perkin and Cannizzaro were founding our science as we now know it.

Textile colouration and finishing is probably the most ancient chemical technology which is still pervasive in any society; in every age it has been boosting researches, whose fallout has enriched every sector of science, technology, medicine, economy, art and politics. In recent years we have seen that hi-tech material research is often rediscovering ideas from an unbroken story of more than ten thousands years, aiming at improving sustainability and quality of life.

The thesis of this work is that it could even be possible to redesign most of the syllabus for chemistry courses at secondary level, following the thread of colour and dyeing science.

It means looking at chemical theories and interpretations not as simply learning some odd law concerning invisible things, but as a way of thinking about the origin, properties and changes of anything we literally *see* outside and inside us, from blood to food, from nail polish to sneakers.

By picking experimental suggestions from polymers and fibres, water, dyes and surfactants, colorimetry etc., students may be introduced to general, physical, organic and analytical chemistry, to material science, health & environmental issues, philosophy and ethics of science.

This work is based on the author's teaching activity in courses of many levels, from job training to undergraduate academic, with special reference to recent experiences at "Setificio", the technical high school which, since 1868, has been a core component of the "Como silk district".

Many activities of different classes (age 15 to 19) have been coordinated in a collaborative form on the ground of some common experimental work, also including peer-to-peer teaching.

The underlying theoretical framework has then been proposed to each class with respect to different advancement levels and for the aims of their own course.

1. Cannizzaro, S. "Sunto di un corso di filosofia chimica", Genova, **1858**
2. Palazzi, S. "Origine e metrica del colore - spunti didattici", *X congresso nazionale DD-SCI*, Verbania, **1996**.
3. Coppola, B. P. "The Most Beautiful Theories..." *Journal of Chemical Education* **2007**, *84*, 1902-1911.