How to introduce a current research to physics classroom: Liquid crystals as an example

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Apstrakt. A common students' opinion is that physics is old, irrelevant for everyday life and therefore boring. On the other hand, some strange people that are very gifted love it and spent their time in laboratories with a sophisticated equipment, and they even like this.

One possibility to fight against such believes is showing the opposite: the research is alive, vivid, done by people who laugh and see the sunny side of life, however they are motivated to investigate the unknown. Their findings improve almost every point of our everyday life. The research is not reserved for a few people only but everybody can understand research results if the new knowledge is communicated in a language understandable to a lay person. To students in school, experience should be provided, which allows them to construct the new knowledge.

In this contribution our experience related to an introduction of current research in the field of liquid crystals to education at the pre-university level will be reflected. First, the teaching module on liquid crystals will be outlined and critical experiments that illustrate phenomena typical for liquid crystals will be shown. Second, the goals, the expected reasoning of the students will be discussed. Third, the motivation and the history of module development will be presented and discussed. Finally, actions needed for similar introductions will be briefly quoted.