

Fluorescent compound for security inks with higher protection level

CSIC has developed an organic fluorescent compound whose emission frequency varies as a function of external stimuli such as pressure and temperature. Therefore, this compound provides a double mechanism of use. The first mechanism consists in the ability of this material to show different colors depending on the angle of incidence of the light. The second mechanism occurs as the temperature increases producing a color change in the material that can be observed under ultraviolet light.

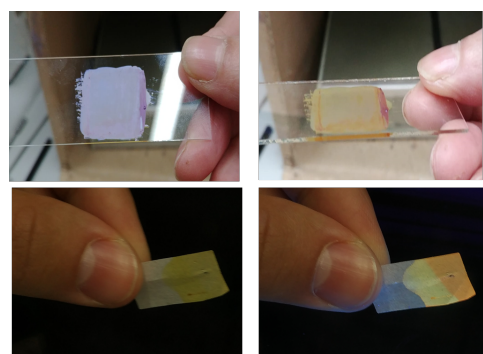
Industrial partners, manufacturers of inks, interested into a patent licence agreement for development of different applications for the banking, pharmaceutical and textile sectors are being sought.

An offer for Patent Licensing

A double mechanism to secure banknotes and documents

The alarming increase and "professionalization" of the counterfeiting of products in different sectors has led to the search for advanced technological solutions such as the incorporation of emblems that are easily recognizable but difficult to reproduce. In this sense, security inks, based on luminescent materials, are a suitable alternative. However, there is a need to develop new materials that provide a higher level of security by allowing a double verification mechanism.

CSIC has developed a fluorescent compound whose emission frequency varies as a function of pressure and temperature. It consists in a fluorogenic material which provides a double mechanism of use. It shows a different color depending on the angle of incidence of the light. Besides, as the temperature increases, a color change occurs in the material that can be observed under ultraviolet light. These transformations can be reverted, what make this material suitable for security inks.



Top: Different colors of a film of the compound when is observed under different angles
Bottom: View of the compound deposited onto paper. The edge was heated to cause transformation. Viewed under visible light(left) and under UV (right)

Main innovations and advantages

- The synthesis of this compound is simple enabling its industrial scaling.
- The compound can be used alone or together with other components (solvents, polymer matrix, etc.) in anticounterfeiting security inks.
- This material provides a higher security level due to its double mechanism of use (mechanic and thermal).
- It can be applied to secure banknotes and/or documents. It can also be of great interest in the textile, pharmacological and/or packaging sectors.

Patent Status

PCT patent application filed

For more information, please contact:

Dra. Patricia Thomas Vielma, PhD

Deputy Vice-Presidency for
Knowledge Transfer

Spanish National Research Council
(CSIC)

Tel.: 91 568 18 25

E-mail: patricia.thomas@csic.es
comercializacion@csic.es