

Colloidal Photonic Crystal Film Anti-Counterfeiting Technology

Security tags based on the reflection and transmission diffraction properties of two-dimensional colloidal photonic crystal films and the processes involved.

THE TECHNOLOGY

Based on novel, high quality colloidal photonic crystal films, the technology offers two levels of protection in the same film. First is a visible reflective structural colour effect which at first sight looks like it is a standard security tag design. The second level is hidden and more complex diffraction effect which can be custom designed by the simple yet effective and low cost manufacturing process.

The resulting diffraction effects, of which hundreds of thousands of unique patterns can be created, are easily verifiable for authenticity of the product by optical means and comparing 'red' pattern characteristics with those stored in an external database (Figure 1).

Benefits:

- Un-paralled levels of security owing to the hundreds of thousands of possible custom diffraction patterns
- “Smart” and quick validation method
- Low cost manufacturing process
- Unique options for design, manufacturing and application of novel security tags

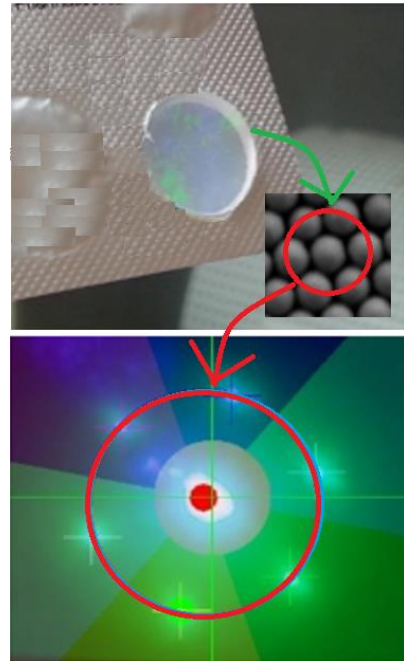


Figure 1 – Product application and real-time authentication

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FIELDS OF APPLICATION

- Pharmaceutical and medical device manufacture and packaging
- Food packaging (including baby/infant formula nutrition)

OPPORTUNITIES

- Research collaboration

CONTACT

Eleanor Cornish on Tel: +353 21 4205886 or email: eleanor.cornish@ucc.ie
www.ucc.ie/en/techtransfer/