



HOT EMBOSSING

FOR HOLOGRAPHIC EFFECTS AND BRAND PROMOTION

Technology advantages supported by VTT

Optical effects produced on packaging and printing materials

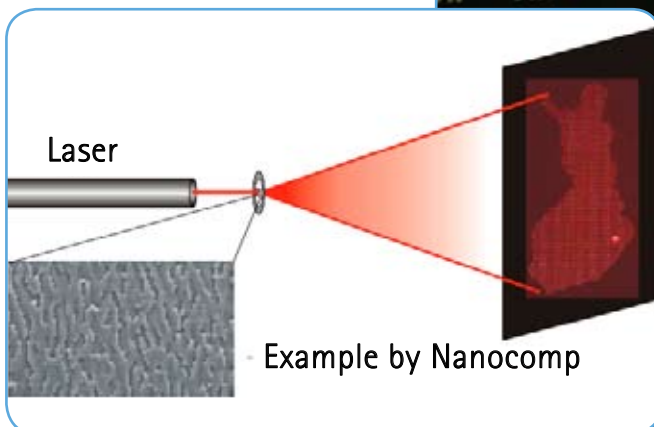
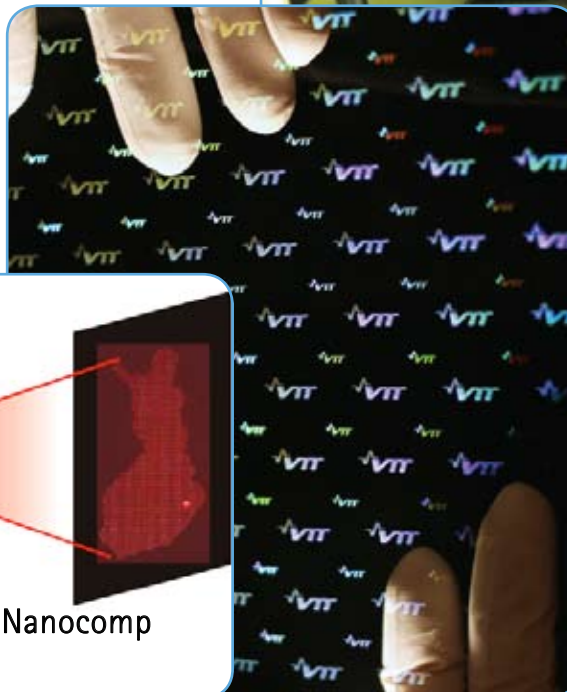
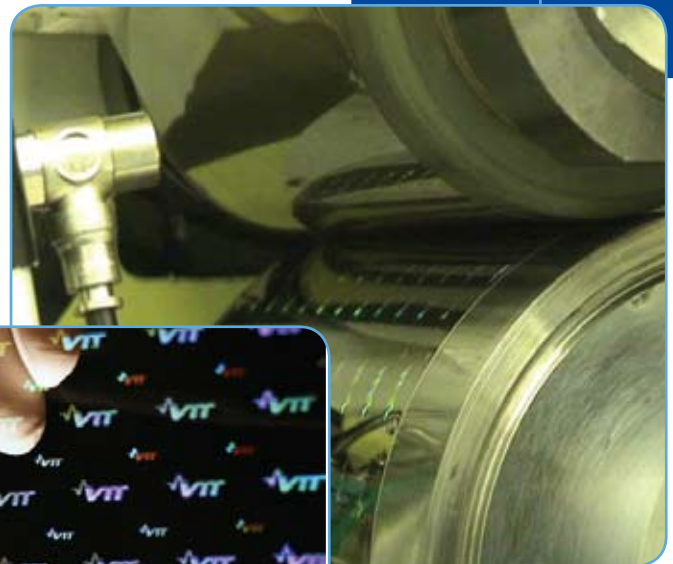
- No need for special labels or holographic foils
- Transparent and non-transparent substrates

Environmentally friendly optical effects

- No metals needed
- Environmentally friendly coatings

Capability to high volume/low cost production

- Embossing integrated into a printing production line
- No need for separate vacuum coating phases

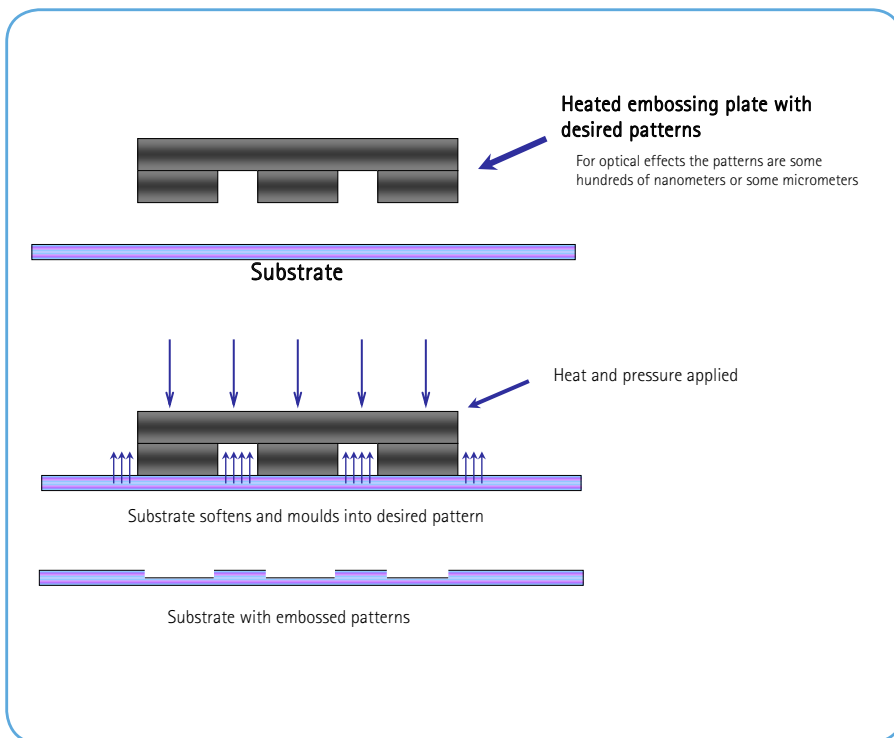


Hidden pictures made visible by laser illumination for brand protection (covert)

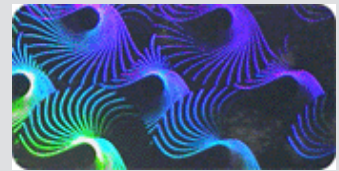
Decorative effects on papers or on plastics for brand promotion (overt)

From Design and Laboratory Testing to Production the objective:

- Design support
- Laboratory and pilot testing of different substrates, coatings and optical designs
- Coating know-how
- Sleeve welding know-how
 - Special know-how is needed for welding the embossing plate as sleeve for installation around the embossing cylinder
- Embossing unit and production parameter specifications and know-how
 - Embossing and backing cylinders including sleeve installation
 - Additional equipment like cleaning and surface treatment
 - Temperature and pressure parameters for a specific application
- Quality control specifications and know-how
 - Off-line and on-line diffraction efficiency measurements
 - Production parameter measurements; temperature, pressure, speed
 - Registration measurements
 - Computer system with graphical user interface.



Library designs



Using ready made library designs

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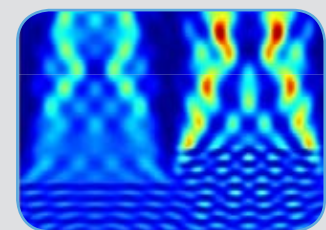
Custom designs



Designer's ideas



Optical design



Custom design optical effects

Additional information

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• Technology partnership

• Technology and innovation management

• Technology and market foresight

• Strategic research

• Product and service development

• IPR and licensing

• Assessments, testing, inspection, certification