

LIGHT UP YOUR DISPLAY
WITH
NANOCOMP

May, 2021

NANOCOMP

FLEXIBLE LIGHT GUIDING



VELI-PEKKA

Veli-Pekka Leppänen - Curriculum vitae

CEO & Co-founder of Nanocomp

Personal information

- Born in 1971
- Married, two sons

Education

- Higher school examination, Päiviönsaari Secondary School in Varkaus, 1990
- Master of Science, physics, University of Joensuu 1996
- Doctor of Philosophy, physics, University of Joensuu 1999
Dissertation titled "Optical Properties of Bio-Optical Materials", 1999

Knowledge of languages

- Finnish: native
- English: fluent
- Swedish: satisfactory ability to use swedish orally and in writing

Occupations

- Research assistant, University of Joensuu, Department of Physics, April 1995 – December 1995
- Amanuensis, University of Joensuu, Department of Physics, January 1996 – December 1996
- Researcher, University of Joensuu, Department of Physics, January 1997 – June 1998
- Development Manager, Nanocomp Oy Ltd, July 1998 – August 2001
- CEO, Nanocomp Oy Ltd, September 2001 to present

Intrests and activities

- Member of the board of Directors, Photonics Finland
- Chairman of committee in international affairs, North Karelia Chamber of Commerce



NANOCOMP OVERVIEW

- Nanocomp is focused on display illumination and light management films
- Manufacturing is based on roll-to-roll process
- Operating globally, headquarters in Finland. Other locations in USA, China, Hong Kong, Japan and Taiwan



TURNKEY SOLUTIONS

NANOCOMP

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DISPLAY ILLUMINATION

Display back- and frontlight guides for portable devices (e.g. tablets, notebook PCs, E-readers), wearables, IoT, digital signage, automotive etc.



→ BENEFITS

- Ultra-thin & flexible: 0.2-0.5 mm
- Large sizes: up to 15.6" (diag.)
- Excellent optical performance through proprietary micro-imprint technology
- Cost effective and accurate UV-R2R mass-manufacturing process

DISPLAY ILLUMINATION

Colour epaper



R-LCD



→ BENEFITS

- Excellent contrast and colour properties
- Full optical bonding
- Several standard sizes + customized solutions available

OTHER FILM TYPE OF SOLUTIONS

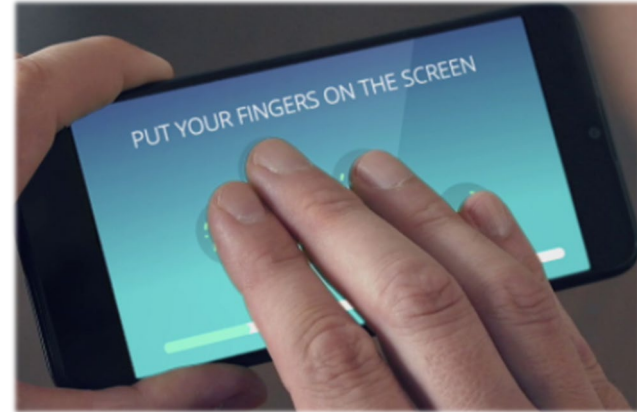
Switchable Privacy films



Thin lightguide films for decoration



Films for Fingerprint Sensors



OTHER APPLICATION SEGMENTS

- Bendable smart watch
- Curved hand-held devices
- Wearable items
- Mobile health monitoring
- Smart jewelry
- Smart clothing and shoes
- Console displays (automotive)
- Interactive electronic shelf labels



OUR TECHNOLOGY

Our proven mass-production
roll-to-roll technology,
integrated with customized solutions

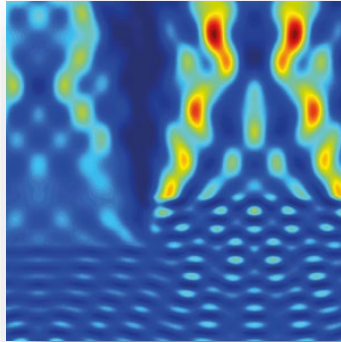
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ADDED VALUE BY EXCELLENCE

Design



Tooling



Production



Prototyping – Material and process development – Project management

Design, analysis and simulation of optics

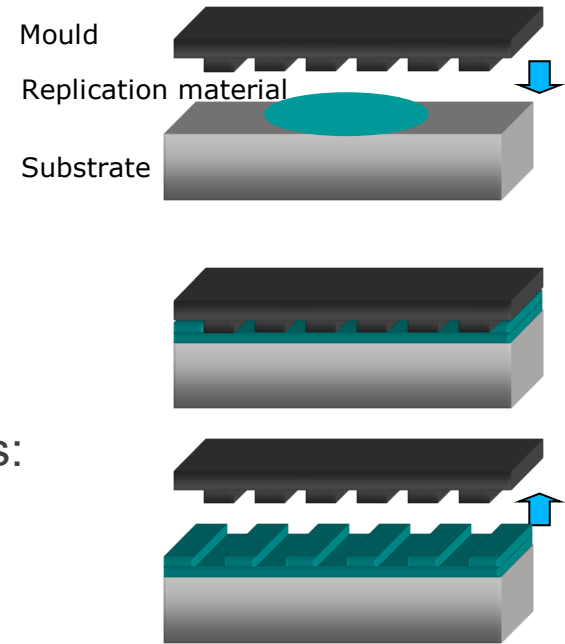
Production of nickel stampers through electroforming

High accuracy mass production (R2R replication and die-cutting with 100% AOI)

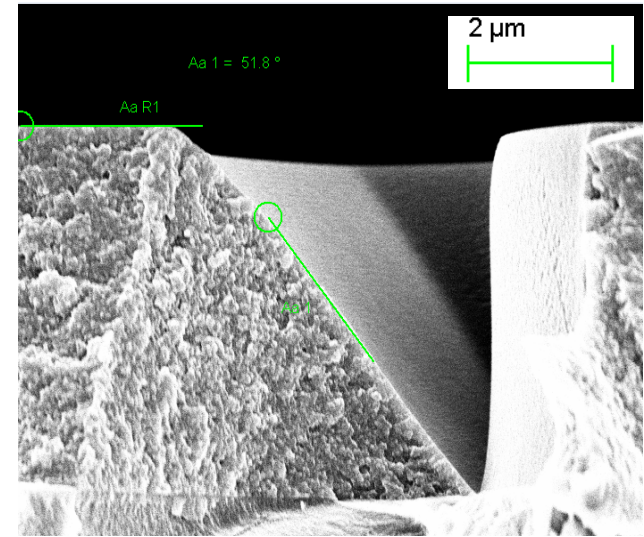
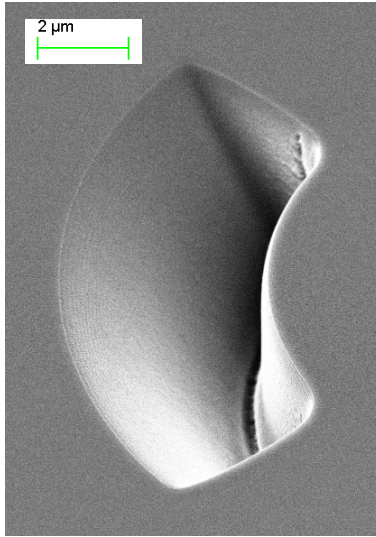
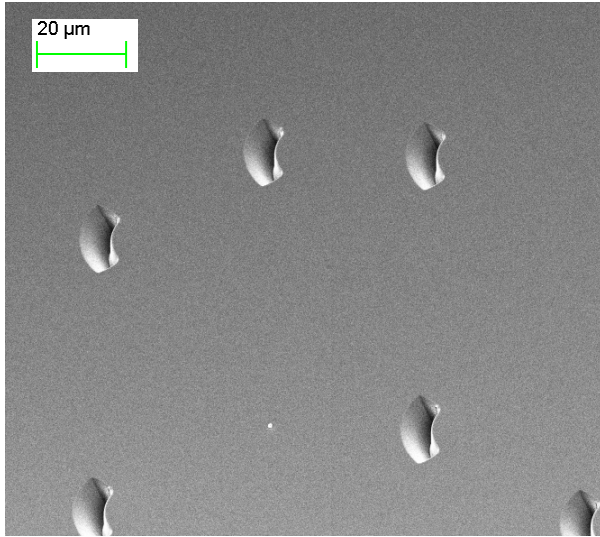
ISO9001, ISO14001 and OHSAS18001 certified

PRINCIPLE OF ROLL-TO-ROLL PROCESS

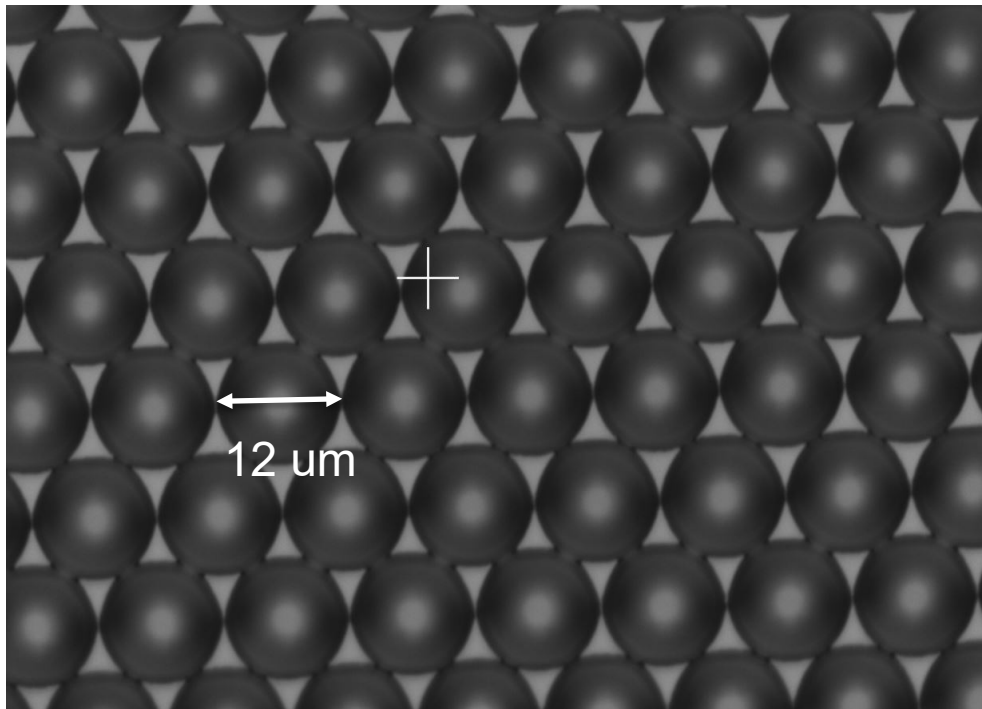
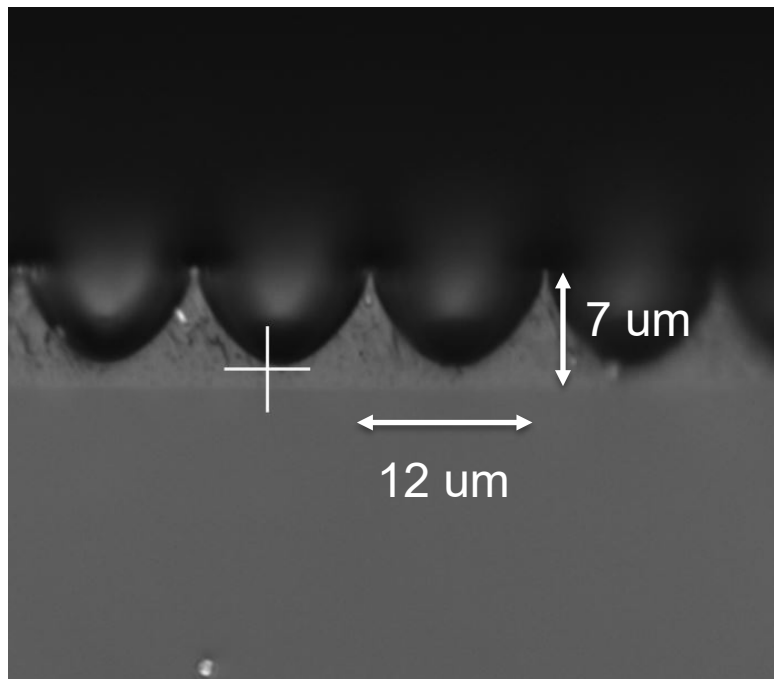
- Substrate film materials
 - PC
 - PMMA
 - PET
 - TPU
- In-house developed replication materials
- Standard thickness of the substrate materials:
 - 10 μm – 500 μm



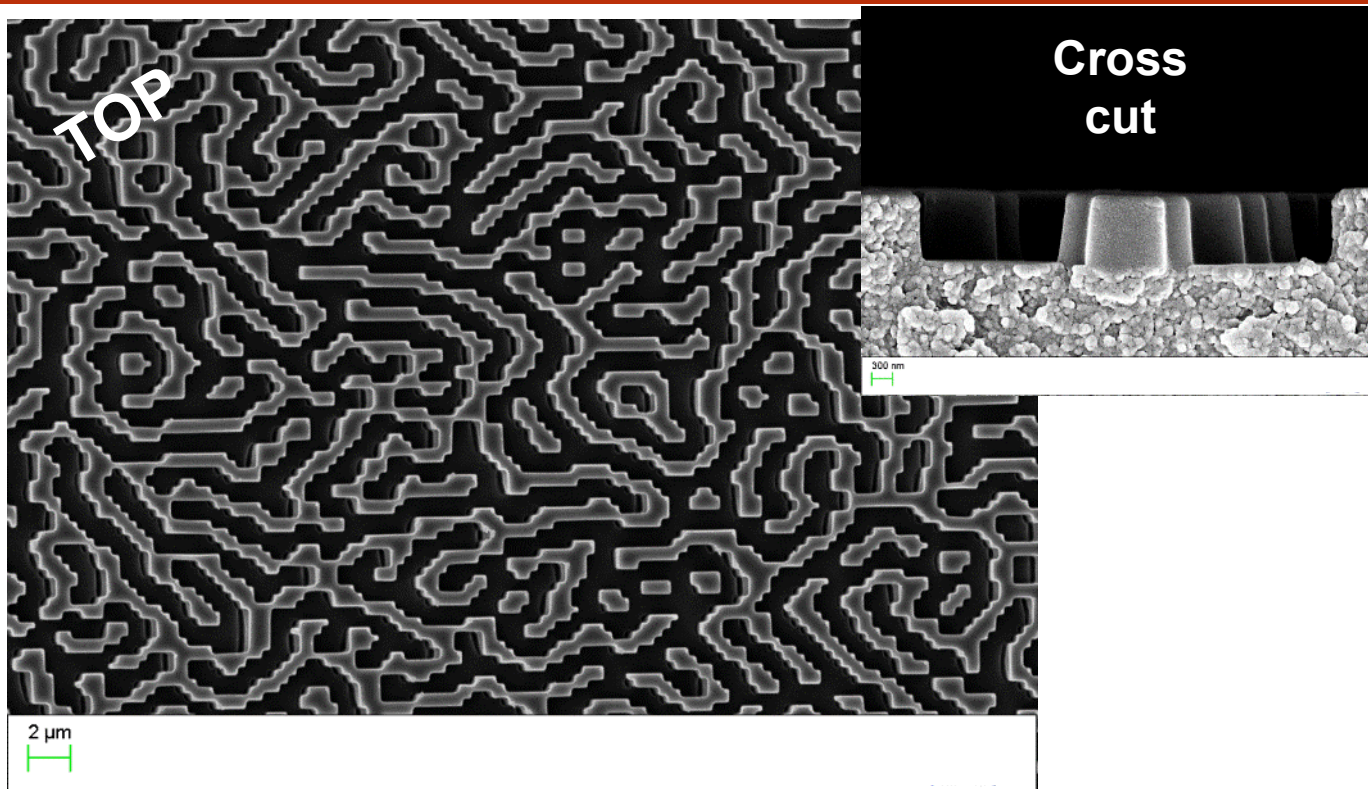
MICRO STRUCTURES – MODULATED PRISM



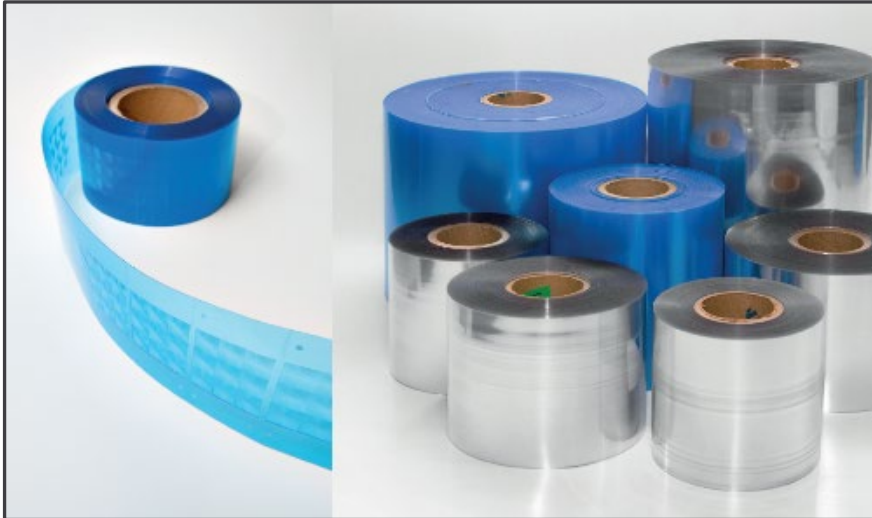
NANOCOMP MICRO LENS ARRAYS



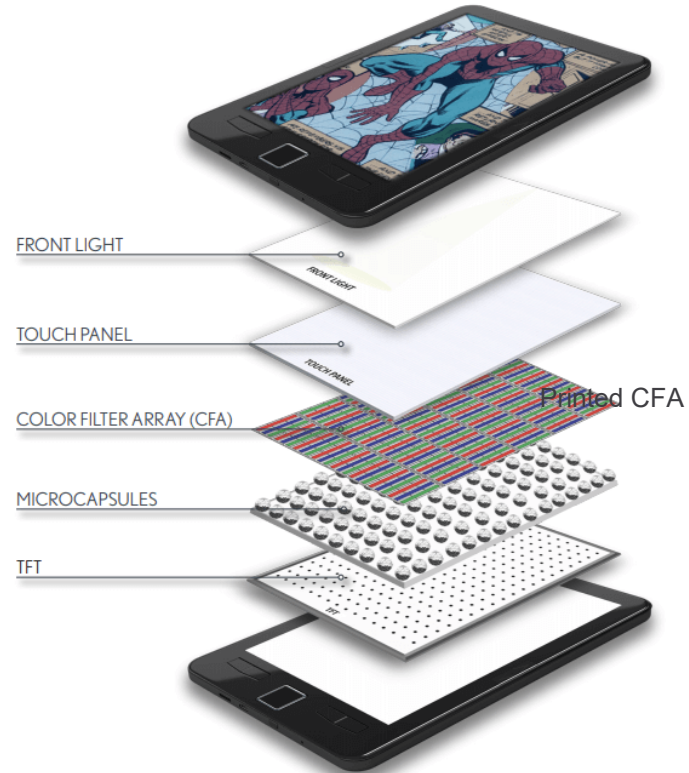
LASER BEAM SHAPING STRUCTURES



MATERIALS

	Substrate film	Features
	PC	<ul style="list-style-type: none">• standard thicknesses 75, 125, 175, 250, 375 and 500 μm• high optical transparency• high heat resistance
	PMMA	<ul style="list-style-type: none">• standard thicknesses 75, 125, 175, 250, 375 and 500 μm• high optical transparency• good weathering and UV resistance• very good scratch resistance
	PET	<ul style="list-style-type: none">• standard thicknesses 23, 50, 75, 175 and 250 μm• high optical transparency• outstanding heat resistance
	TPU	<ul style="list-style-type: none">• standard thicknesses 180 and 200 μm• elastic• very good UV resistance and outdoor properties

COLOR EPD





THANK YOU!

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