Printing Photonic Materials

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PμSL for Photonic Materials

- PuSL printed QDs color converter

- High resolution, multi-shape and multicolor QDs converters
- <25 um pitch, pixel size sub 10 um, pixel height sub 10 um

Printed QD converter for white color microLEDs: The Moore’s Law for Future Display?

Photonics for Greentech

Solution processed smart window for radiant heat control

- Size-controlled active thermochromic hydrogel scatters as solar modulator.
- Record high luminous transmittance (88% at 25°C).
- Large solar modulation ($\Delta T_{Sol}$ 81%) in both visible ($\Delta T_{Vis}$ 87%) and NIR ($\Delta T_{IR}$ 76%)

Photonics for Greentech is on the rise.

https://www.photonics.com/Articles/Smart_Structures_on_the_Rise/p5/vo170/i1117/a64397

Metamaterials & Metasurfaces

- Printing nano structure with FIB / eBeam evaporation

- Nano-kirigami for polarization selection.
- Grayscale stencil lithography for multispectral filter array.

Metamaterial for multi-dimensional information reconstruction

Conventional imaging system

Mixed spatial / spectral information

Sensor array

Metamaterial / coded aperture

Sensor array

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