

Competition for glass fibre on short distances

Auf einen Blick

- The results of optimizing polymer foils for polymer-based optical waveguides are:
- improved quality,
- extended fields of application,
- a flexible alternative to glass fibre at a low price.

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ITA | Optical waveguides used for data transmission can easily be printed at low cost – a serious future alternative to glass fibre optic networks. The aim of researchers of the Institute of Transport and Automation Technology (ITA) is to improve the quality of printed optical waveguides.

ITA research associate Gerd Hoffmann is developing new methods for printing optical conductive paths on polymer foils by using a conventional printing machine. In future, optical waveguides could for example be used in data communication systems. They have great potential, as they are easily applicable, even to non-uniform surfaces, at a low price.

Hoffmann says: "Today's quality is not yet high enough to replace glass fibre on short distances effectively." Especially the cross-sections of the waveguides must be "smoothed". Rough waveguide cross-sections are problematic due to attenuation effects.

Not as simple as it seems, the problem requires in truth pure fundamental research. Hoffmann explains why: "For waveguide cross-sections of about 50 micrometres, the process is difficult to control." The scientist is working on it: His research project is still running until 2018.

by Julia Förster

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