



Microoptics at Home

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MicroMountains Applications AG (Villingen)



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BACKGROUND and BASICS

Applications and Industries

- many driving innovations are given by microoptical applications: DVD-Player, back projection projector or handheld analysis systems

Physical limits prevents high bandwidth

- the future „data highway“ for television, video and internet data requires increasing bandwidth
- today copper lines are used with limited bandwidth up to 50MBit (typ.)
- thus electro-optical technologies have to be used for fast and reliable communication for future applications (e.g. Fibre to the home (FTTH))



Image:
www.telekom.com

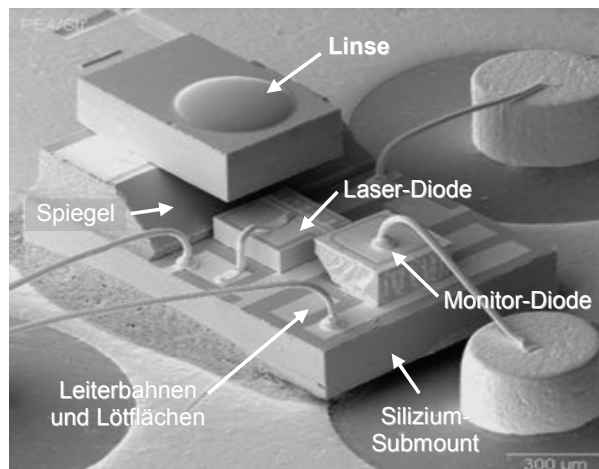
CONCEPT and SOLUTION

R&D project for a low-cost silicon technology for microoptical submodule:

- advanced silicon submount process includes micro-mirror (45°), submount with conductive lines and bonding area
- micro module of 0,7 mm x 1,2 mm (with laser diode, monitor diode, micromirror, micro-lense on a submount)
- AuSn deposition for fluxfree soldering
- high quality optical surfaces
- high precision alignment of the laser

Features

- cost reduction up to 90% (e.g. cost of micro-mirrors)
- increased yield and higher quality
- low-cost batch processing technology (40.000/month)



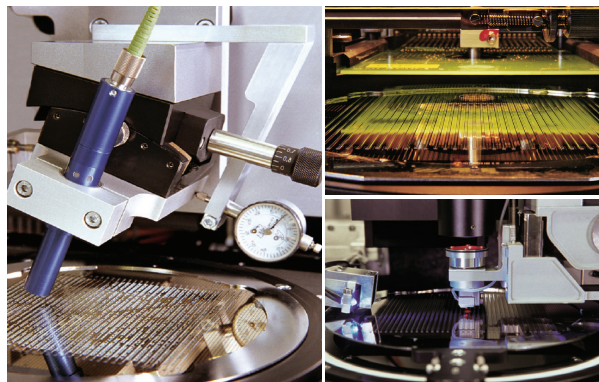
STATUS and OUTLOOK

Status of project

- R&D project is finished
- at present: project for technology transfer to volume production (submount wafer are processed at HSG-IMIT)

Outlook

- Looking for partners for new applications, e.g. micro-optical systems for displays or analysis systems (e.g.) gases



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