

## 4PI TYPE C *NON*-CONFOCAL LASER SCANNING MICROSCOPY

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The 4Pi microscopy of type C utilises two opposing high angle objectives in a coherent manner, both for excitation and for detection. If the beams of both objective lenses interfere, the axial resolution is improved 5-7 fold over that of a regular (confocal) sectioning microscope[1]. We present and characterise a new 4Pi setup allowing non-confocal image acquisition with side lobes < 45 %. Complementary signals from both interferometer branches can be acquired simultaneously gathering the complete information available.

[1] S.W. Hell et al , “Properties of a 4Pi-confocal microscope”, *J. Opt. Soc. Am. A.*, **9**, 2159-2166 (1992a)

[2] H. Gugel; J. Bewersdorf; S. Jakobs, J. Engelhardt, R. Storz and S.W. Hell, „Cooperative 4Pi Excitation and Detection Yields Sevenfold Sharper Optical Sections in Live-Cell Microscopy”, *Biophys. J.* **87**, 4146-4152 (2004)

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