

ThA1 Plenary

Into the Future with Optical Amplifiers

David N. Payne

University of Southampton, U.K.

Abstract:

Optical Fibre Amplifiers have seen widespread adoption in terrestrial and undersea applications and various projections suggest a billion dollar market within the next five years. Their ready availability from a number of suppliers has spurred major developments in soliton communications, WDM systems, CATV and, in the near future, the distribution network. By effectively removing the problem of fibre-loss, the fibre amplifier has been instrumental in the demise of major projects on coherent transmission and on fluoride fibre. By removing the loss barrier, the amplifier in turn has spurred world-wide research on dispersion compensation, both for newly-installed fibre links and for upgrading the installed fibre base.

Now that optical fibre amplifiers are virtually a commodity, it is timely to take stock of present amplifier performance and ask what could be improved, as well as to predict what might be expected in the near future. The talk poses a number of possible scenarios, for example, the ready-availability of a low-cost 1.3 μ m amplifier. What role might be played by semiconductor amplifiers, following impressive recent reports of their performance? Is there a need for amplifiers at other wavelengths in the near infra-red, both for telecoms and LIDAR applications? The talk will review the possibilities in all these areas and attempts some predictions for future developments.