

Simulation of Silicon Nitride Based Arrayed Waveguide Gratings Applying Three Different Photonics Tools

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Abstract. We present simulation of 8-channel, 100-GHz silicon nitride based AWGs using three different commercial photonics tools, namely PHASAR from Optiwave Systems Inc., APSS from Apollo Photonics Inc. and RSoft from Synopsys Inc. For this purpose we created identical waveguide structures and identical AWG layouts in these tools and performed BPM simulations. For the simulations the same calculation conditions were used. These AWGs were designed for TM-polarized light with an AWG central wavelength of 850 nm. The output of simulations, the transmission characteristics, were used to calculate the transmission parameters defining optical properties of simulated AWGs. The achieved simulated results from all three photonics tools were analyzed and compared with each other.