

### **All-Optical Switching possibilities for optical packet switching**

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**Abstract** – Extreme fast (in picoseconds range) switches are required for the task of all-optical packet switching, and the switch should stay in the selected state during the transport of the whole data stream (both the header and the payload). All-Optical Switching (AOS) can be carried out by integrated form or using active elements eg. laserdiode, Semiconductor Optical Amplifier (SOA). In integrated optical solutions based on Planar Lightwave Circuit (PLC) nonlinear optical material has to be used as core or cladding medium in waveguide based integrated optical circuits. We focus our attention on two materials, which are available in our laboratories: the chalcogenide glasses and, bacteriorhodopsin.