

**Final relation regarding the visit of the dr. Mile Ivanda in the framework of the STM - Short Term Mobility 2014**

During the visit we have discussed about some results regarding the coating of spherical microresonators and their different applications in photonics. The spherical microresonators high Q-factor and low mode volume make them perfect for a number of photonics applications. A thin film coating on the surface of the resonator using an optically active or passive layer can be used to modify significantly the optical properties of the resonator. In the IFN laboratory of Trento we have successfully coated the microresonators with a silica-hafnia sol-gel derived coating and we have studied the effect of the coating on different optical and spectroscopic properties of the microresonator. In particular we have considered the effect of thickness and composition and a possible model for the dispersion was discussed.

We have scheduled a research activity for the next six months both for the experimental and theoretical activities. We plan to use the PECVD and RF sputtering techniques for the coating and it was decided to develop glass-ceramic coating in order to achieve Raman amplification in the whispery gallery modes.

Data 10 September 2014

Firma ..

