

## **New Detection Package at Graz**

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### **ABSTRACT**

At present, SLR Graz is using a simple, straightforward detection package: After the main receiving telescope, the 14 mm beam passes a 0.3 nm interference filter, and is focused on the C-SPAD surface. While this setup is simple, stable and reliable, the 0.3 nm filter usually only allows a maximum of 30% to 40% transmission; it is also difficult to operate it in multicolor schemes.

To improve the total transmission of the optical receiver channel, we are building now a new detection package, which uses dispersion for wavelength filtering as well as for wavelength separation for multicolor operation. Because the effective filter bandwidth will be less than 0.15 nm, and the overall transmission of the receiver package should be more than 70% due to omitting any interference filter, the calculated improvement in signal to noise ratio should be a factor of 4. In addition, the dispersion scheme allows for efficient wavelength separation, again with minimized optical losses.