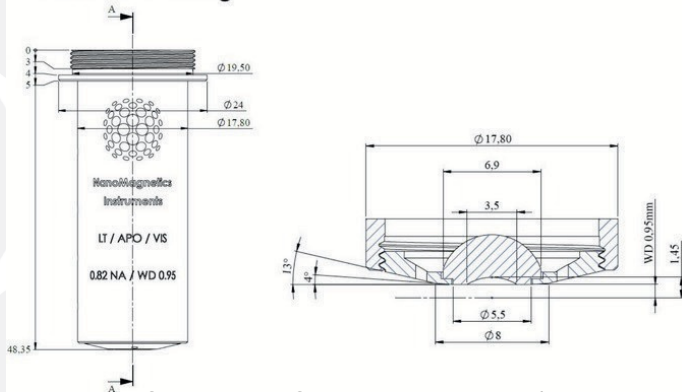


# LOW TEMPERATURE APO OBJECTIVES UV - VIS - NIR- IR 1550 nm TELECOM

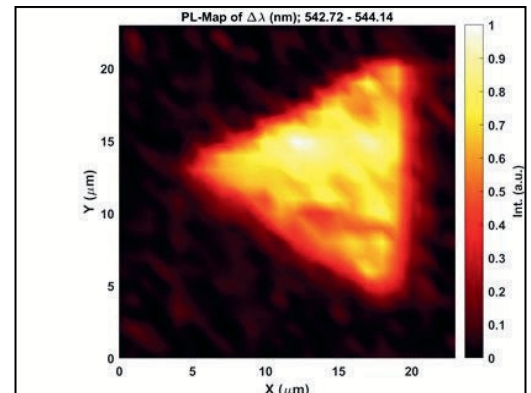
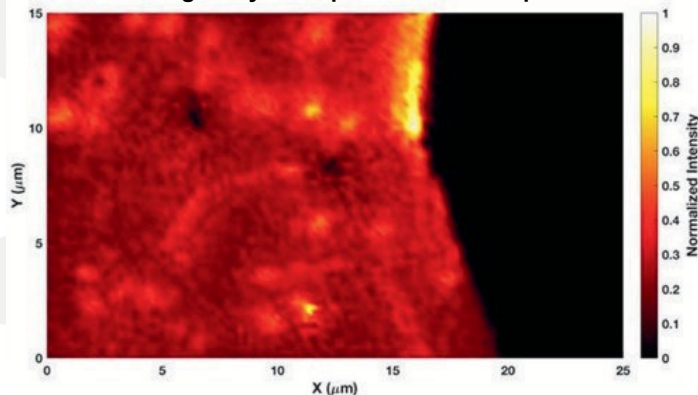
|                                              | LT-APO-UV                                                 | LT-APO-VIS        | LT-APO-NIR       | LT-APO-IR         | LT-APO-TELECOM    |
|----------------------------------------------|-----------------------------------------------------------|-------------------|------------------|-------------------|-------------------|
| Numerical Aperture (NA)                      | $\geq 0.82$                                               | 0.82              | 0.82             | 0.82              | 0.82              |
| Working Distance (WD)                        | 1.0 mm                                                    | 0.95 mm (1.45 mm) | 1.5 mm (1.9 mm)  | 0.95 mm (1.35 mm) | 1.2 mm (1.6 mm)   |
| Apochromatic Range                           | 465–695 nm                                                | 540 nm - 780 nm   | 650 nm - 970 nm  | 930 nm - 1365 nm  | 1540 nm - 1560 nm |
| Clear Aperture (CA)                          | 4.7 mm                                                    | 4.7 mm            | 4.7 mm           | 4.7 mm            | 4.7 mm            |
| Focal Length (FL)                            | 2.8 mm                                                    | 2.8 mm            | 2.8 mm           | 2.8 mm            | 2.8 mm            |
| AR Coating ( $\geq 80\%$ total transmission) | 400 nm - 1000 nm                                          | 400 nm -1000 nm   | 400 nm - 1000 nm | 600 nm - 1550 nm  | 600 nm - 1550 nm  |
| Environment                                  | Low Temperature , high magnetic fields, high vacuum & UHV |                   |                  |                   |                   |
| Dimensions (diameter x length)               | 20 mm x 49 mm                                             | 24 mm x 49 mm     | 24 mm x 49 mm    | 20 mm x 49 mm     | 20 mm x 49 mm     |
| Weight                                       | 46 gr                                                     | 46 gr             | 46 gr            | 46 gr             | 46 gr             |
| Mounting Method                              | Dovetail Mounted / RMS Thread (0.8" x 36 TPI , 3 mm long) |                   |                  |                   |                   |



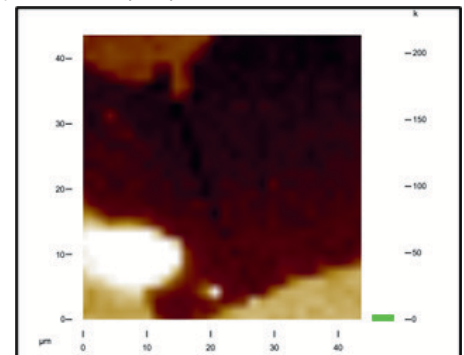
## Technical Drawing



## Single Layer Graphene Raman Map\*

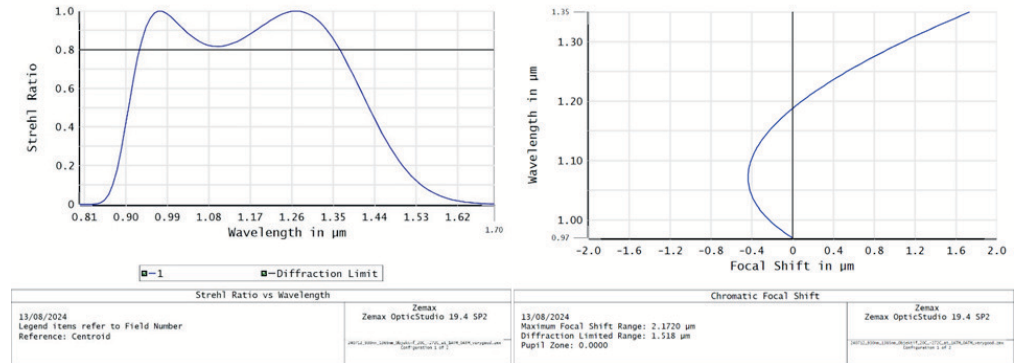


\* Data courtesy of Furkan Aglarci, Çağlar Samaner, Serkan Ates  
@ Izmir Institute of Technology , Turkey & Feridun Ay , Nihan  
Kosku Perkgöz  
@Eskişehir Technical University, Turkey

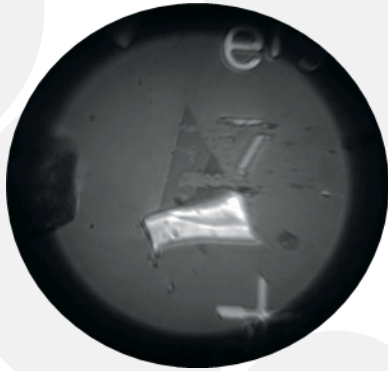


## hBN Raman Map

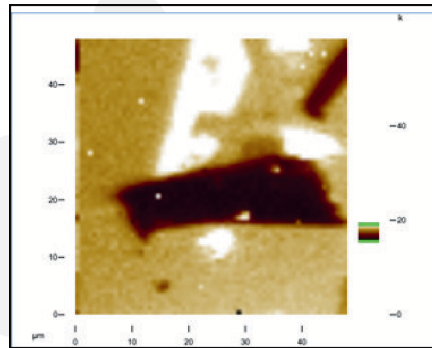
## Optical Microscope Image @ 1.4K



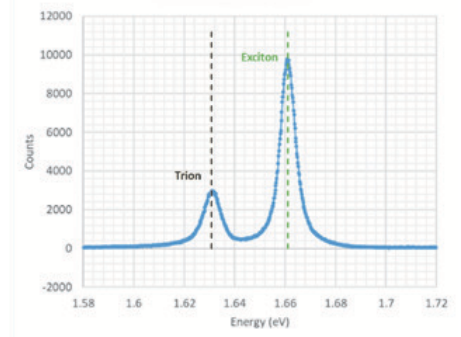
**MoSe<sub>2</sub> Flake Image**



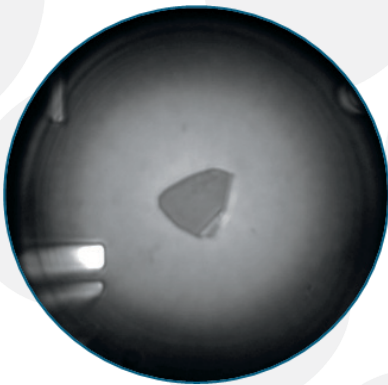
**MoSe<sub>2</sub> Flake Raman Map**



**MoSe<sub>2</sub> PL@2K, @8T**



**Graphene Flake Image**



**Graphene Flake on Si Substrate**

