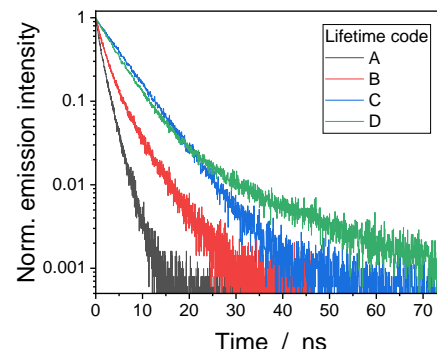


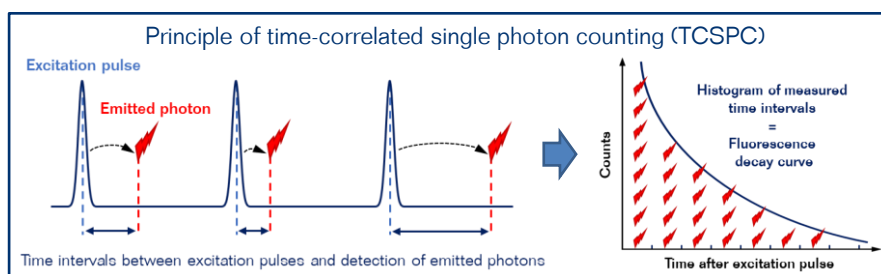
## PolyAn Fluorescence Lifetime Beads

PolyAn has developed fluorescence lifetime-encoded beads (FLT beads) that can be distinguished according to their different fluorescence decay times. The beads can be excited at 488–532 nm and emit at 550–700 nm. PolyAn's FLT beads can be used to multiplex within fluorescence lifetime imaging microscopy (FLIM) and lifetime-based flow cytometry (LT-FCM). They are also suitable as a model system for lifetime-based cell imaging.



## Fluorescence Lifetime via TCSPC

Fluorescence is the spontaneous emission of light from a fluorophore after its excitation by light absorption. The fluorescence lifetime (decay time) is the average time that the molecule stays in the excited state before emitting a photon. The fluorescence lifetime is typically in the nanosecond time range and is commonly measured with time-correlated single photon counting (TCSPC).



## Products list

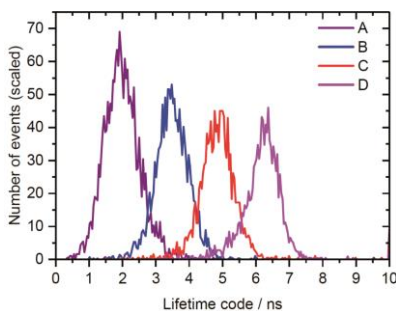
Product ID	Lifetime code	Fluorescence lifetime (nominal)	Bead size
110 00 006	A	$1.5 \pm 0.1$ ns ( $1.7$ ns) <sup>1</sup>	6.5 $\mu$ m
110 10 006	B	$3.1 \pm 0.2$ ns ( $2.7$ ns) <sup>1</sup>	6.5 $\mu$ m
110 20 006	C	$5.5 \pm 0.1$ ns ( $5.5$ ns) <sup>1</sup>	6.5 $\mu$ m
110 30 006	D	$5.6 \pm 0.7$ ns ( $7.9$ ns) <sup>1</sup>	6.5 $\mu$ m

The standard packaging volume is 1.5 mL with a solids content of 0.1% (1 mg/mL).

Our PolyAn FLT Beads are also available with 3D-Aldehyde, Streptavidin or Neutravidin, Protein A/G, 3D-Azide, 3D-Alkyne, 3D-DBCO, and 3D-MTZ surfaces. A custom modification with antibodies, peptides, or oligonucleotides is available upon request.

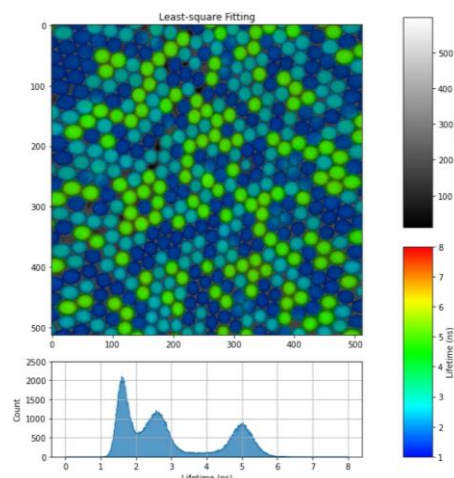
## Applications

PolyAn's Fluorescence Lifetime Beads have been applied for temporal multiplexing in time-domain flow cytometry (LT-FCM) as well as for real-time fluorescence lifetime imaging (FLIM).



Lifetime distributions of the PolyAn FLT bead lifetime codes as measured with LT-FCM.<sup>1</sup>

Testing neural network-based data analysis on single-photon avalanche diode (SPAD)-TCSPC measurements for real-time fluorescence lifetime imaging using three PolyAn FLT bead codes.<sup>2</sup>



<sup>1</sup> D. Kage *et al.*, *Sci. Rep.* **2018**, 8, 16715. DOI: 10.1038/s41598-018-35137.

<sup>2</sup> Y. Lin *et al.*, *Sci. Rep.* **2024**, 14, 3286. DOI: 10.1038/s41598-024-52966-9.

## High performance consumables

PolyAn is a nanotechnology company specialized in Molecular Surface Engineering. Since 1996 PolyAn develops and manufactures consumables for multiplex diagnostic and LifeScience research. This includes the broadest portfolio of microarray consumables (slides, plates) on the market.

PolyAn also offers functionalized plates for immunoassays (e.g. ELISA) and has developed a wide range of fluorescence encoded PMMA microparticles (beads) for multiplex bead assays and flow cytometry. Our calibration tools are widely used in fluorescence imaging systems.

## Ordering information

We are looking forward to your telephone orders and technical enquiries at our Customer Service and Technical Service Department Monday – Friday. Office hours for telephone enquiries are 9:00 AM to 6:00 PM (Central European Time).

## Distributors

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