Perspectives on new generation of FLIM instrumentation

Fluorescence lifetime imaging microscopy (FLIM) measurements is a rapidly expanding advanced analysis in the life sciences, biomedical and biotechnology compartments. However, the tools and devices currently on the market are designed for pure research and require resources both in terms of instrumentation space and in computational terms for data processing, as well as adequate user training for data analysis and results interpretation. Thus, in the near future, with the aim of widely adopting and using the FLIM technique, and making it an enabling technology in new contexts seeking new applications, we propose a new type of instrumentation that is able to operate beyond the lab environment, and is equipped with artificial intelligence to assist the end user in data analysis.