NEXT GENERATION GLASS MICROFLUIDICS

Individually developed for Flow Chemistry applications

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Keywords: Flow Chemistry, Photochemistry, glass-based flow reactors, microstructured mixers, lipidic nanoparticles

Little Things Factory (LTF), a brand of PLANOPTIK, develops and manufactures customer-specific microstructured mixers, flow reactors, and microfluidic components made from glass, quartz, and glass-silicon composites. Due to their high biocompatibility and resistance to aggressive media, LTF's flow reactors are well suited for chemical and pharmaceutical synthesis.

The use of micromixers in flow chemistry and photochemistry offers several advantages: Such as increased safety in chemical manufacturing processes with hazardous or expensive reagents. Furthermore, rapid changes in reaction conditions such as temperature, flow rate and pressure are also possible. This enables the controlled formation of various products. The most important advantage is that flow reactions are highly scalable, this enables the preparation of processes for the later industrial application on a large scale. Microfluidic devices made from glass offer superior performance in terms of chemical resistance, UV transmission as well as a high temperatures and pressures. Major breakthroughs using LTF flow reactors are in the production of Efavirenz (Anti-HIV [1]) and Amiodarone (Ovarian Cancer [2]).

LTF also offers complete microfluidic systems consisting of the above-mentioned devices as well as high-precision continuous syringe pumps. These setups are also customized to be integrated into customer's systems.

Figure 1: *A glass microreactor for flow chemistry applications*

Little Things Factory becomes PLANOPTIK! Little Things Factory GmbH has been a subsidiary of PLANOPTIK AG for more than 15 years. We have grown together into a strong team for a long time. The result is now a joint company: PLANOPTIK AG

[1] Sravanthi Chada, Devender Mandala and Paul Watts; Journal of Flow Chemistry, Volume 7, pages 37–40, (2017)

[2] Asia Saorin at all; Scientific reports 14, Article number: 6280 (2024)