

- The NanoTek Chemistry System is a modular microfluidic chemistry system with the ability to combine both microscale and macroscale process steps. Modular components give the user maximum flexibility for both discovery and clinical applications.

Customer Profile

"Establish in one day what traditionally takes weeks."

Vanderbilt University, Institute of Imaging Science Nashville, TN



H. Charles Manning, Ph.D.
Director of Molecular Imaging
Research

Customer since: 2010

Q: What is the focus of your lab's research?

My lab's research focus includes the development of novel positron emission tomography (PET) probes for cancer imaging and their biological validation in preclinical models and humans.

Q: Why did you incorporate the NanoTek® Flow-Chemistry System into your laboratory?

The small-molecule component of our Molecular Imaging Research program features considerable emphasis on high-throughput, diversity oriented synthesis of small, drug-like compounds. Rapid and efficient triage of undesirable candidates is paramount. Beyond cellular and molecular-level triage, we recognized the practical necessity of further prioritizing promising leads prior to in-vivo studies based on the feasibility of labeling with radioisotopes, such as 18-F. Traditionally, feasibility and optimization studies can be time consuming and laborious, sometimes requiring weeks to months. We found the high-throughput nature inherent to the microfluidic NanoTek module to be very well suited for efficiently carrying out exploratory radiolabeling studies of novel compounds. Speaking to this efficiency, we routinely conduct up to 20 microfluidic runs back-to-back in a single day, enabling rapid optimization of conditions including reaction times, solvents and temperature. By establishing starting points for these determinants, we anticipate that the NanoTek module will increase the efficiency of large-scale production methods of novel radiopharmaceuticals.

Q: To whom would you recommend the NanoTek for their research?

The NanoTek module is likely very suitable for those developing large-scale imaging probe libraries or those investigators with an interest in labeling a variety of diverse compounds, such as drug candidates.