

**For Immediate Release:** August 17, 2023

Contact Information:

Jill Hronek, Director of Marketing Communications

Telephone: +1.630.256.7527, ext. 103

E-mail: [jhronek@slas.org](mailto:jhronek@slas.org)

### **Looking at the Latest in Life Sciences Discovery and Technology**

*The August 2023 issue of SLAS Technology features original research articles including the first tablet processing workstation.*

**Oak Brook, IL** – The August 2023 issue of *SLAS Technology*, the open access journal emphasizing scientific and technical advances across the life sciences, is now available. [Volume 28, Issue 4](#), contains a review from the literature and eight full-length articles covering nanodiamonds, automated buffer exchange, epidermal growth factor (EGF) and other laboratory automation-related research.

From the Literature

- [Life sciences discovery and technology highlights](#)  
The authors examine several areas of research within the literature to highlight significant developments in microfluidics, advances in gene editing and high-throughput mass spectrometry in drug discovery.

Full-length articles

- [Biomedical applications of nanodiamonds: From drug-delivery to diagnostics](#)  
This review article provides an overview of the unique properties of nanodiamonds and the potential contributions the carbon nanoparticle can make across preclinical and clinical stages of biomedical research.
- [In vitro delivery of mTOR inhibitors by kidney-targeted micelles for autosomal dominant polycystic kidney disease](#)  
The study explores a potential treatment strategy for autosomal dominant polycystic kidney disease by encapsulating mTOR inhibitors in kidney-targeting nanoparticles, effectively enhancing drug efficacy and minimizing off-target effects in cell cultures.
- [Mera: A scalable-high throughput automated micro-physiological system](#)  
The authors present Mera, a system with multiple fluidic modes for culturing and assaying microtissues, to address the dire need for scalable microphysiological systems.
- [Incorporation of automated buffer exchange empowers high-throughput protein and plasmid purification for downstream uses](#)  
The authors demonstrate two separate automated purifications to showcase the potential of automated liquid handlers for efficient purification of biologics using pipet-based dispersive

solid-phase extraction, followed by buffer exchange, resulting in rapid and high-quality biologics production without manual intervention.

- [Quantitative assessment of automated purification and concentration of \*E. coli\* bacteria](#)  
The study introduces the automated system “aDARE,” that effectively purifies and concentrates target bacteria from environmental interferents using size-based filtration membranes, demonstrating its feasibility and efficiency for various applications.
- [Automated sample preparation of protein solid dosage forms: Novel application for the tablet processing workstation](#)  
Presented in this article is a first-of-its-kind automated method called the Tablet Processing Workstation to prepare large molecule tablet samples for analysis, significantly reducing labor time compared to manual sample preparation while maintaining analytical accuracy.
- [SAGAS: Simulated annealing and greedy algorithm scheduler for laboratory automation](#)  
The authors propose a solution for improving the scheduling for laboratory automation in biology problems: SAGAS (Simulated Annealing and Greedy Algorithm Scheduler), a fast and effective scheduling method combining simulated annealing and the greedy algorithm, to optimize the scheduling of life science experiments in laboratory automation.
- [Plant molecular farming-derived epidermal growth factor revolutionizes hydrogels for improving glandular epithelial organoid biofabrication](#)  
This study used *Nicotiana benthamiana* to produce a plant based epidermal growth factor (P-EGF) as a signaling cue to increase organoid formation efficiency. By encapsulating the P-EGF in a hyaluronic acid and alginate hydrogel as a delivery system, researchers significantly improved proliferation of glandular epithelial cells and the cellular viability and growth of the organoids when compared to P-EGF alone.

Access to the August issue of *SLAS Technology* is available at [https://slas-technology.org/issue/S2472-6303\(23\)X0005-3](https://slas-technology.org/issue/S2472-6303(23)X0005-3)

\*\*\*\*\*

*SLAS Technology* reveals how scientists adapt technological advancements for life sciences exploration and experimentation in biomedical research and development. The journal emphasizes scientific and technical advances that enable and improve:

- Life sciences research and development
- Drug delivery
- Diagnostics
- Biomedical and molecular imaging
- Personalized and precision medicine

SLAS (Society for Laboratory Automation and Screening) is an international professional society of academic, industry and government life sciences researchers and the developers and providers of laboratory automation technology. The SLAS mission is to bring together researchers in academia,

industry and government to advance life sciences discovery and technology via education, knowledge exchange and global community building.

*SLAS Technology: Translating Life Sciences Innovation*, 2022 Impact Factor 2.7. Editor-in-Chief Edward Kai-Hua Chow, Ph.D., National University of Singapore (Singapore).

###