



**Call for Papers**  
**IEEE TRANSACTIONS ON**  
**AUTOMATION SCIENCE AND ENGINEERING**  
**Special Issue on Automation for the Life Sciences**

**IEEE**

Automation plays an increasingly important role in life sciences. With advances in automation, the human genome and other genomes have been sequenced. Modern molecular biology and biotechnology have contributed new assays that, when automated, provide more accurate, rapid and increasing amounts of information and decreased costs. Similarly, pharmaceutical industry is heavily dependent on automation, especially as it shifts from products that treat diseases to analytical methods that detect and classify diseases. Automation for the life sciences is thus broad and includes laboratory automation for fluid handling and assay processing, automated systems for high-throughput screening and drug discovery, high-throughput production and analysis of protein and DNA microarrays, automated devices for analyzing living cells, lab-on-a-chip analysis tools, and numerous detection methods. This Special Issue aims to publish original, significant and visionary papers describing scientific methods and technologies that improve efficiency, productivity, quality and reliability for areas including laboratory, biotechnology, and pharmaceutical automations. The central theme of the Special Issue is on *recent progress in automation for the life sciences*. Special attention will be paid to papers focusing on integrating automation science with biological principles, and to solve related automation problems. Submissions from experts in academia and industry worldwide are strongly encouraged. Topics to be covered include, but are not limited to,

- Automated lab-on-a-chip platforms.
- Automated systems for liquid handling.
- Fermentation reaction and process automation.
- Genomics and proteomics software automation.
- DNA and protein micro-array fabrication automation.
- Pharmaceutical fabrication and drug screening automation.
- Detection technologies that enable automation for biological processes.
- Automated systems for DNA, protein, and cell manipulation and analysis.
- Automated scanning probe microscopy-based systems for bio-applications.
- Liquid chromatography (LC)/mass spectrometry (MS) bioinstrumentation automation.
- System integration including interconnects and interfaces between automated modules.

**Important Dates**

- March 1, 2005: Paper submission deadline.
- July 1, 2005: Completion of the first round paper review.
- November 1, 2005: Completion of the second round paper review.
- December 1, 2005: Final manuscripts due.
- March 1 2006: Tentative publication date.

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**Paper Submission**

All papers are to be submitted through the IEEE's **Manuscript Central** for Transactions on Automation Science and Engineering <http://mc.manuscriptcentral.com/t-ase>. Please select "Special Issue" under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Automation Science and Engineering publication guidelines <http://www.engr.uconn.edu/~ieeetase/>.

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