



## CASE STUDY

# ADS Automates Cell Culture Robots

### OVERVIEW

A Cell Culture Robot (CCR) is a PC-controlled robotic auto-sampler that automates the measurement of Transepithelial Electrical Potential (TEP) and Resistance (Rt) of various cell cultures being grown on micro porous filters of High-Throughput Screening (HTS) 12- and 24-well micro plates.

### THE CHALLENGE

ADS was commissioned to deliver the software to automate the measurement of TEP and Rt in cell culture micro plates to provide the advantages of reproducibility, accuracy, flexibility and speed-of-measurement.

## THE SOLUTION

The CCR automatically measures and records TEP and Rt values from cell culture plates. A user-specified software controlled sequence positions the robotic arm (containing TEP and Rt electrodes) over each well and performs a series of measurements, before moving automatically to the next well in the series, until all wells have been measured.



## CONCLUSION

The ability of the CCR to reproducibly and precisely locate the TEP and Rt electrodes with respect to the culture well plate resulted in highly reproducible and accurate measurements. The LabVIEW, Windows-based software from NI used to develop the application provided the user with intuitive, easy to use software panels to acquire, display and store the measurement data. The storage of the data as a .csv file provided the engineers with the opportunity of additional analysis of the data using Microsoft Excel, further enhancing the systems capability.