

Solutions to Robotic Laboratory Automation: From CataLyst to High Speed Distribution Motion

YIP Cecilia

ThermoElectron, Laboratory Automation & Integration, USA

Thermo Electron Laboratory Automation and Integration, also known as Thermo CRS and formerly CRS Robotics, specializes in the development and provision of mission-critical solutions to enhance productivity in the global life-sciences industry.

The proprietary software, POLARA(tm), together with Thermo's leading mover technologies and peripheral instruments, help our customers to achieve cost-effective solutions that accelerate the testing, moving and analysis of critical elements of their processes.

Plate mover robotics include the starter model CataLyst Express (offering benchtop solutions), CataLyst or F3 robot on a track, and the Dimension 4 High Speed Distribution Motion system, which has the capabilities to provide an ultra high throughput generation of up to one million data points per day. The systems (including tables) are also modular and unique in that an upgrade path is available to help customers expand or modify the system as per their future changing needs, including changing of peripheral instruments (e.g. detection modules). An integrated system approach is provided to customers, thus offering turnkey solutions to customer's requirements.

Thermo Electron Laboratory Automation and Integration products are used in many market niches in the life-sciences sector, including drug discovery, drug development, clinical processing and biotech research, etc.. Some example common applications include automated DNA purification and amplification, immuno and cell-based assays, specimen processing for toxicology labs, high throughput screening and numerous other procedures in which automation can enhance productivity.

Thermo's experience in integration, applications, customer support and service, together with the modularity, flexibility, reliability, high speed and efficiency of the turn-key integrated robotic systems, has earned a high level of customer' satisfaction worldwide. More than 55% of customers for high end laboratory automated systems are repeated customers.

DARFA (Differential Analysis of Restriction Fragment Array): Full-genome display technique and its applications

PARK Han-Oh

Bioneer Corps, Korea

The completion of genome project may lead to identification of all of genes and their protein products through microarray-based technology, but such technology would be possible only for model organisms for which results from a completed genome sequence were available and whose genes would be identified from the genomic sequence or from other database.

Here we describe DARFA (an acronym for differential analysis of restriction fragment array), an approach that utilizes sequences for the recognition site of restriction enzyme *Hpy188 III* (TC \wedge NNGA), to give a single identity without genomic information. DARFA band patterns can be used for monitoring the identity and the degree of similarity among genomes or transcripts. Those are 1) Comparative Genomics find the different gene among similar microorganisms, 2) Gene Expression Profiling - compare the transcripts between two different tissues or cells in mRNA level after reverse transcription.

we are going to assess the differentially expressed mRNAs by the mRNA DARFA technology in organisms uncovered the genome information. We are going to discover the genes to regulate the key function in various organisms.

