Digatron
Member Update

Shelton CT, USA – Aachen, Germany – Qingdao, China – Pune, India
Global Technical Partnership

Digatron Power Electronics
A&D Technology
BBS Automation

Turnkey Applied Solutions

- Automated End-Of-Line Testing
- Automated Module & Pack Assembly
- Automated Module Disassembly
- Process Control & Data Management
- Cell Assembly & High Volume Formation
A&D Technology

Industry Leader in Battery Testing Solutions

- Strong and Stable – Over 3,100 Employees
- Global Support with Offices Located in:
  - U.S., Japan, China, U.K., Germany, Australia
- U.S. Headquarters – Ann Arbor, MI
  - Product Development, Engineering, Manufacturing, Integration, Training and Service
- 40 years of test automation system experience
- “Go-To” supplier for most major global R&D Labs
  - Over 1,200 battery test channels delivered
A&D Technology

Battery Test and Lab Management Solutions

- Common Interface for Cell, Module, Pack Testing
  - Reduced Training / Improved Support
  - Scalable for All Applications

- Part Tracker & Data Management
  - Full Traceability of Battery and Test Devices from Cell Prep to Shipment

- Test Monitoring & Remote Notification
  - Customized Interactive Dashboards
  - Automated Alerts – Text, Email, Phone App

- Automated Reporting
  - Integrated Calculation Engine
  - Fully Compatible with Voltaiq - Battery Intelligence Software Platform
BBS Automation

Industry Leading Assembly & Test System Integrator

- International footprint offers a globally interconnected team at 8 locations worldwide, with approximately 1200 employees - U.S., Germany (HQ), Poland, China, Malaysia

- Flexible manufacturing capabilities for complete turnkey solutions with end-to-end execution at all production sites.

- An expert at sharing information and constantly improving its technological proficiency. Our multi-disciplinary project teams easily handle all aspects of a project, from visualizing the customer’s desired machine to delivering it, installing it, and training customer personnel — wherever the final destination may be.

- Utilize White Boarding process to efficiently communicate station performance, process, relative specifications, major components, acceptance criteria, options, and questions while developing a final solution with our customers team.

- Experience dating back to 1964, resulting in participation in industry development over the last 50 years.
Prismatic and Cylindrical Cell Module-Pack Assembly & Test

- Cell De-boxing
- Inspection and Sorting
- Stacking (Heat Sink/Cell)
- Adhesive Dispensing & Curing
- Insertion, flex circuitry
- Resistance, Laser, Ultrasonic Welding, or Mechanical Joining
- Battery Management System (BMS)
- EOL Testing
BBS Automation

Lithium Ion Cell Assembly
(BBS Starts With Dry Coated Anode and Cathode Foils)

- Anode, Separator, and Cathode Winding / Folding
- Connector Insertion and Weld
- Pouch or Container Insertion
- Heat Seal or Weld
- Drying Oven
- Electrolyte Filling and Seal Container
- Testing: Hipot, Continuity, Voltage, Resistance, Impedance
- Labeling

Ultra Dry Clean Room Experience
.5 um / .5% RH

Up to 75 Folds
Digatron Formation Concept
What does regenerative mean in Formation?

- **Cooler**: Discharge energy not dissipated as heat
- **Energy Efficient**: Discharge energy used to charge other cells or put back on grid
- **Quieter**: No large fans necessary
- **Denser**: More circuits in the same space (4x to 8x smaller)

**For example:**

- ✓ A plant producing 10 million 40 Ah cells per year would save over € 5 million (~$5.7MM) in electricity over 10 years.
- ✓ Require only 30-50% of physical floorspace for formation of cells.
Your Power Solution Team!

- BOBS Automation
- A&D Technology
- Digatron Power Electronics

**Regenerative Hardware Overview**

- E.O.L. Testing
- Insertion Flex Circuitry
- Battery Management System (BMS)
- Adhesive Dispensing
- Prismatic & Cylindrical Cell Module/Pack Assembly
- Cell De-boxing
- Inspection/Sorting
- Stacking (Heat Sink/Cell)
- Resistance, Laser, Ultrasonic Welding or Mechanical Joining