



Contributing to a Green Environment.

Automation for the Renewable and Alternative Energy Industries.

ixmation



ixmation – your automation partner for Renewable and Alternative Energies.

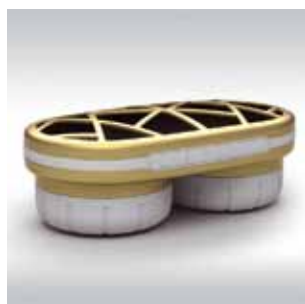
ixmation engineering helps companies develop next generation technologies for the energy industry to improve current processes and increase through put. We also supply engineering services to the photovoltaic, thin film, and concentrated solar power industries. Engineering partnerships have been ixmation’s unique signature in the renewable and alternative energy marketplace. ixmation is your partner in the energy industry.

Experience and Capability

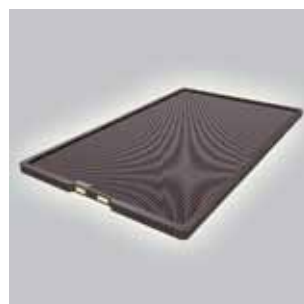
- └ Product Design
- └ Consultation
- └ 3D Concept Analysis
- └ Engineered Quotations
- └ Mechanical Design
- └ Manufacturing
- └ Assembly
- └ Integration
- └ Installation
- └ Training and
- └ Documentation
- └ Project Management
- └ Software Validation
- └ Electrical Design
- └ Electrical Panel Build
- └ PLC/PC Programming
- └ Vision Development
- └ Robot Programming
- └ Testing
- └ System Upgrades
- └ Production
- └ Service Support



Cylindrical Cells



Fuel Cells for Outdoor



Thin Blade



Prismatic Cells



New Production Ideas for the Renewable Energy Industry. Knowledge and Experience. With ixmation.

Experience that you have been looking for...

Today, as a result of engineering partnerships with our customers, ixmation has installed numerous energy production systems around the globe. Consider your needs – ixmation can fill in the gaps between your goals and these needs.

- **Diversified and extensive renewable energy technologies**
- **Co-Development resources for product and production**
- **Comprehensive dedicated project management**



Portable Power



Charging System

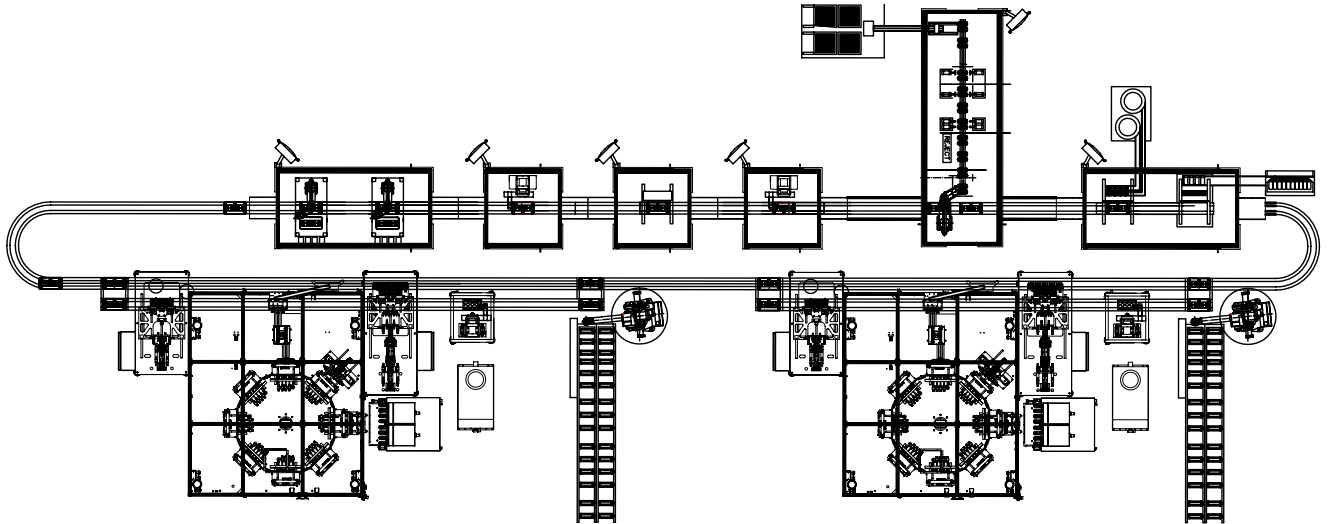


Transportation



Stationary

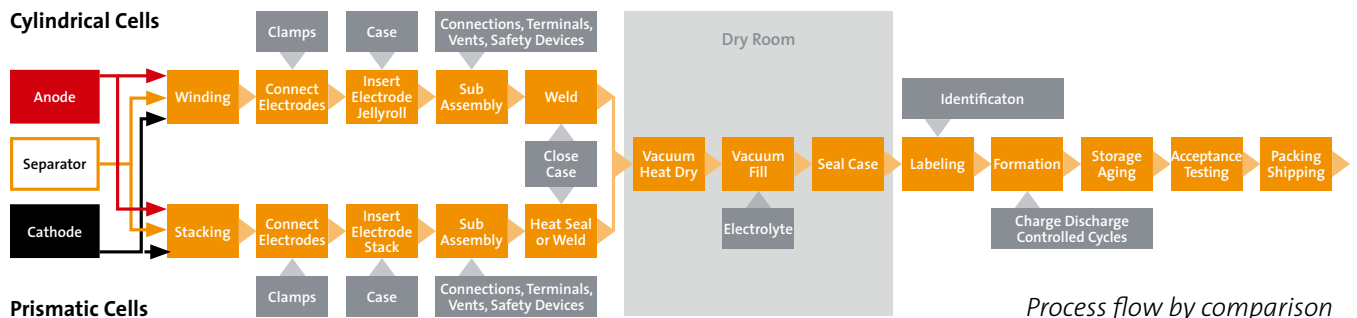
Assembly and Manufacturing Solution for Energy Storage. From ixmation.



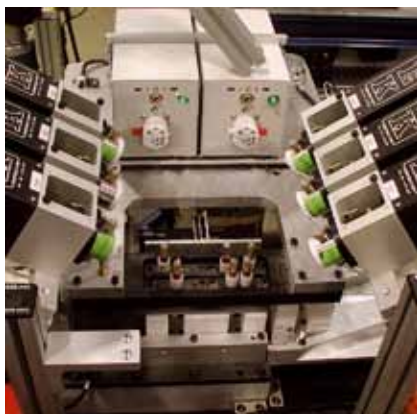
Battery Manufacturing

The process chart below points out the differences in the production of cylindrical and prismatic cells. While the first half of the production process clearly varies, the final assembly after the drying process

is the very same. The product leaves the production line packed and ready for shipment. For both applications, cylindrical and prismatic cells, ixmation has developed, supported and handled several projects successfully.



Process flow by comparison



Electrolyte Fill



Helium Leak Detection



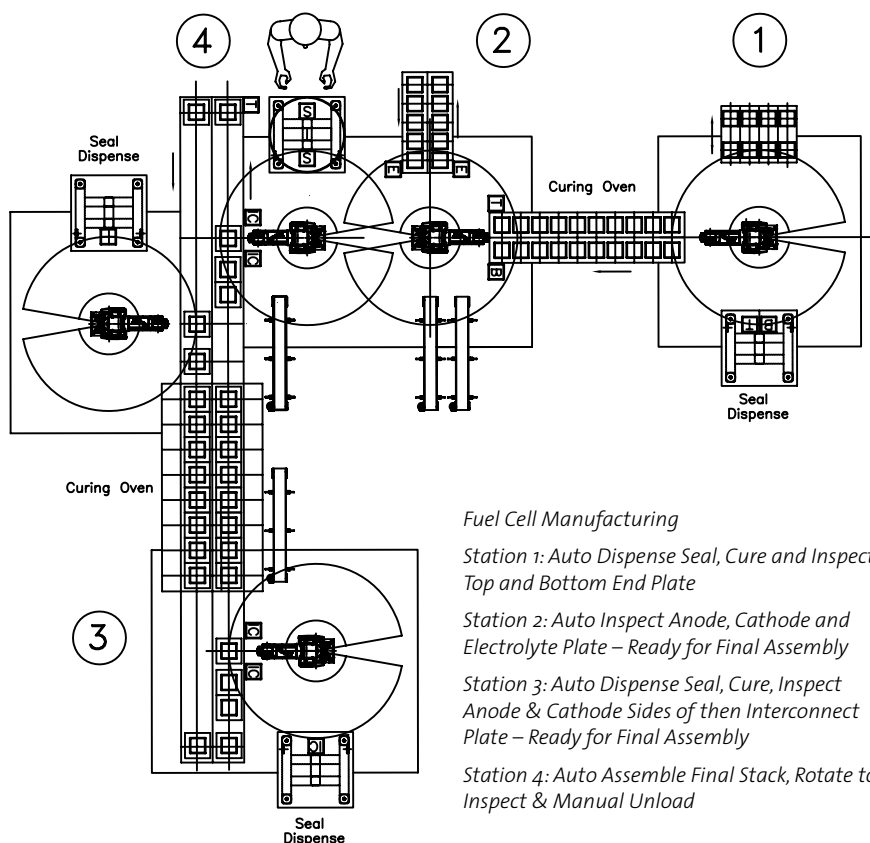
Laser Welding

Innovative Production Ideas for Fuel Cells. By ixmation.

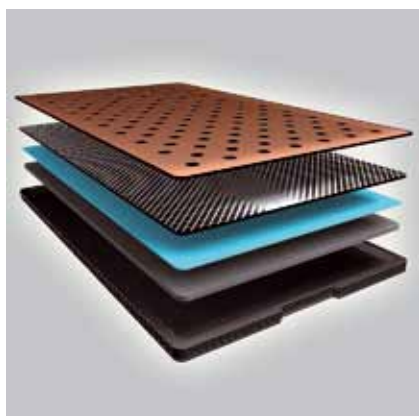
- Manufacturing technology experiences for demanding products
- Operating experience to connect various demanding production processes
- Expert knowledge and equipment for in process quality control and validation

Fuel cells may be the energy source of tomorrow. High-temperature solid oxide fuel cells have a promising future as a source of both power and heat. Scientists are developing new materials and complex components to enhance their manufacture. ixmation is the experienced partner you have been looking for in fuel cell assembly.

ixmation provides engineering skills, material handling, process equipment and the best manufacturing practices to meet the demands of these new alternative energy technologies. ixmation smart solutions for renewable energy in assembly and manufacturing can also improve your fuel cell production.



Seal Dispense



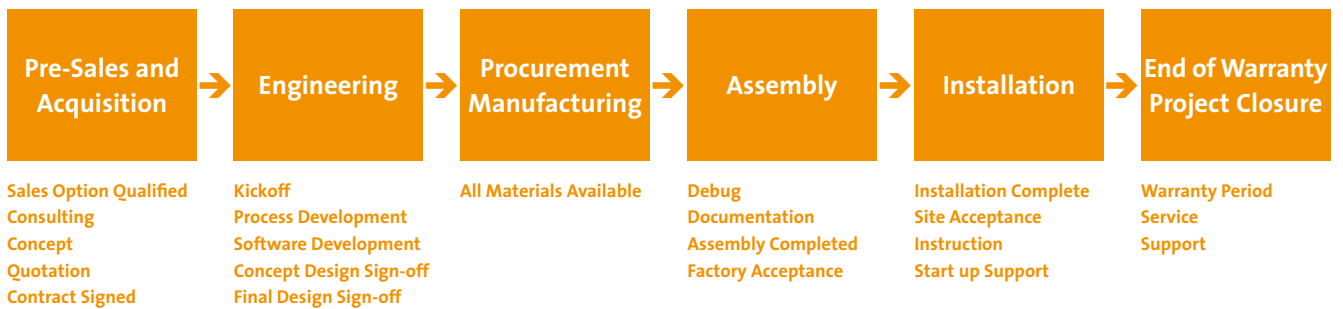
Fuel Cell Stacking



Vision Inspection

Focus on sustained customer satisfaction. Reliable Project and Service Performance. By ixmation.

- ✔ “Best Practice” and Project Management Process
- ✔ Assuring consistency across ixmation facilities worldwide
- ✔ “Stage Gate” tool ensures progression by activity milestones
- ✔ Online customer service request form



Regulatory Compliance
 NRC TÜV ISO OSHA NEMA GAMP NFPA UL SEMI FDA EPA ESD SEISMIC CE

Engineering Services

We specialize in solving problems. ixmation is committed to providing engineering services that offer solutions that are not only financially feasible and structurally sound, but help improve safety, reliability and profitability. ixmation provides high-quality tailored solutions, with full operations capabilities, engineering service and support that covers every need and is available at all ixmation facilities.

Project Management

ixmation customers benefit from a seasoned automation project manager as their single point of contact. Our global footprint facilitates the coordination of multi-site globally organized projects. ixmation project managers operate within a realtime database, implemented since 1995. This tool provides accurate information to our Project Managers, allowing them to effect informed decisions in real time.

Project Security

ixmation project security is tailored to your specification. Dedicated project teams work within encrypted/coded programs. From key-card access to hard or soft wall enclosing project build areas, ixmation ensures confidentiality. We know it is paramount, and we can safeguard it through an isolated assembly environment.



Our know how to your hands. Continous Service and Trainings. From ixmation.

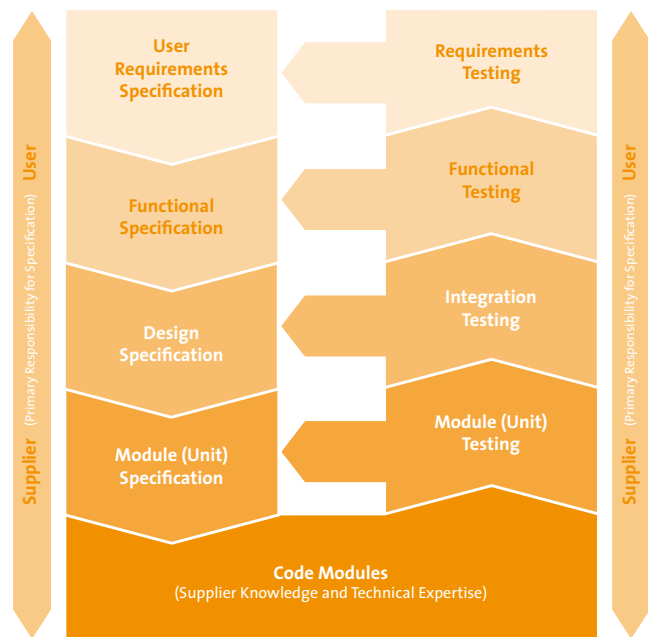
- Customer specific security
- Online customer service request form
- Online Remote Access customer support

Engineering Consulting Solutions

Our team, led by PhD credentials with hands-on knowledge, is the partnership behind your next engineering challenge. Our “quality” tools organize our engineering consulting team at the project level, and begin as a sequential chart that governs activities throughout the process. Quality provides a format for our meetings to ensure that the right questions to our engineering consulting team are asked at the right time. Employees are clear about their objectives and role relative to your program efforts.

Reliable Operator Training

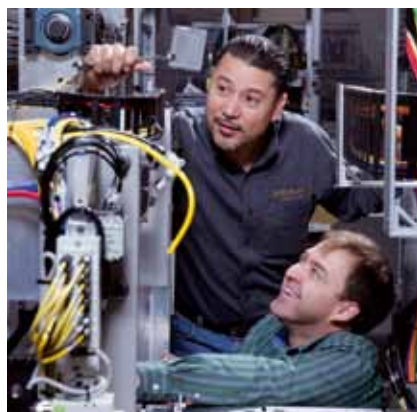
An assembly systems installation is always followed by operator training. This training is offered at our facility for all systems, for your maintenance and operating personnel. The participants learn how to troubleshoot and carry out the required maintenance work on the machine. Preventive maintenance increases the operational reliability, or in other words good operator training reduces down time.



GAMP 5 V Model – Chart for specification and testing.

Ongoing After Sales

Our comprehensive after sales program includes customer support services. Our after sales customer support also includes defined maintenance and individual inspection agreements – to ensure fault-free and reliable operation to keep your plants up and running for years – because the show must go on!



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