Engineering Services

Tailored solutions for your innovation needs, transforming concepts into functional technology

Services across diverse engineering areas such as SW & HW development, regulatory compliance and RUO-CE Marking

Engineering Services

From paper to reality

Prototyping & Technology Transfer: **At Mecwins, we specialize in transforming engineering concepts, prototypes, and research innovations into market-ready products. Our expertise spans optical, mechanical, electrical, and software engineering, ensuring end-to-end technology transfer. From 3D designs and simulations to supplier connections and regulatory compliance, we bring your vision to life efficiently and with precision.**

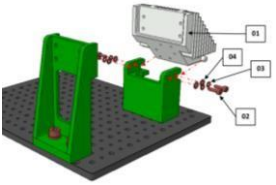
From Paper to Reality: Engineering Projects: **We have extensive experience converting technical designs, patents, and experimental setups into fully functional prototypes and commercial instruments.**

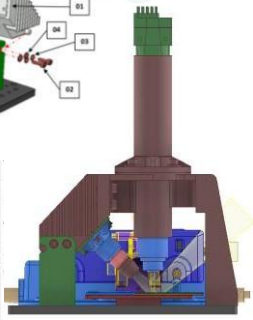
From patents to prototypes to instrumentation

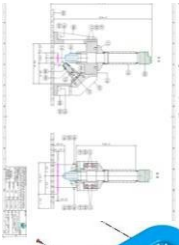
- **Expertise in transforming patents and technical designs into operational devices.**
- **Close collaboration with researchers & industry partners to optimize functionality.**

From scientific research to commercial solutions

- **We convert scientific publications, lab setups, and proof-of-concept systems into scalable, real-world applications.**

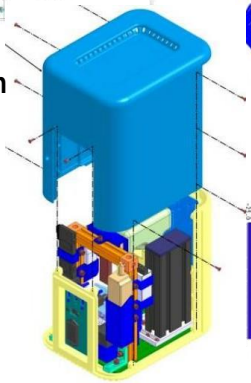


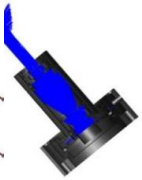


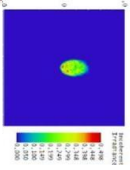


Technology Transfer: Delivering Engineering Solutions to Clients

We specialize in developing high-performance engineering products for third parties and transferring technology to customers, ensuring seamless integration into their operations.







Our services include:

- **Full development of state-of-the-art instrumentation**
- **Detailed Schematics & 3D Models**
- **Assembly Guides & Manufacturing Instructions**
- **Electrical & Mechanical System Design**
- **Component Selection & Supplier Network**
- **Finite Element Analysis (FEA) & Simulations**
- **Technical Specifications & User Manuals**
- **Packaging & Logistics for Product Deployment**

Engineering Services
Customized Solutions

Examples of Our Work

Project	Client	Solution
Automated Optical Inspection System	Research Institution	High-speed image processing for defect detection
Environmental Sensing Platform	Renewable Energy Company	Air quality and environmental data collection system
Precision Motion Control Device	Semiconductor Manufacturer	High-accuracy linear stage for nano-positioning
Liquid Handling Robotics	Biotech Lab	Custom microfluidic integration for precision dispensing
Thermal Control System	Aerospace Client	Active temperature stabilization with Peltier elements
High-Throughput Spectroscopy System	Materials Science Lab	Fully automated spectral analysis with advanced optics

Core Engineering Capabilities

Optical & Electromechanical Systems

- Computerized optical microscopy systems
- Automated optical inspection (AOI)
- Precision motion control: Linear stages, motors
- Temperature control: Thermometers, Peltier actuators
- RH Control: Hygrometers, mass flow controllers
- Fluid dynamics: Microfluidics, flow meters

Instrumentation & Software Development

- Digital acquisition systems
- Autofocus solutions: Laser-based optics
- Piezoelectric actuators for precision movement
- Surface characterization & modification systems
- Custom firmware and embedded system development

Software & Simulation Expertise

We leverage industry-leading tools for engineering design, simulation, and automation:

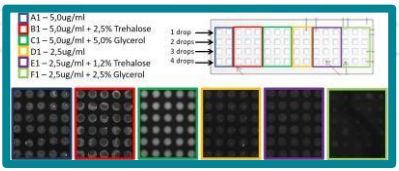
- Embedded Programming: C++, Python, MATLAB
- Control & Data Acquisition: LabVIEW, MultiSIM
- 3D Design & CAD: SolidWorks, Inventor, AutoCAD
- Finite Element Analysis (FEA): ANSYS, COMSOL
- Optical Design & Simulation: Zemax

Engineering Services

Liquid Handling and RUO-CE Marking

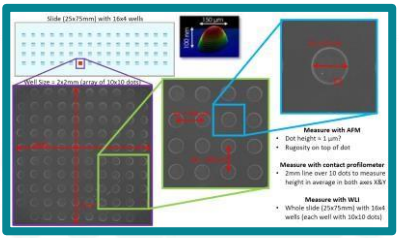
Instrumentation: Liquid Handling Systems

At Mecwins, we provide high-precision liquid handling solutions for biosensing, microarraying, and microfluidics, ensuring accurate, automated, and repeatable liquid manipulation from picoliters to milliliters.



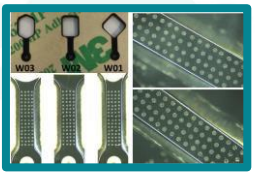
Liquid Handling & Spot Printing

Our automated systems support biosensor functionalization, reagent dispensing, and microarray printing, enabling non-contact, high-throughput, and ultra-low volume applications with minimal sample loss and evaporation.



Microarraying & Microfluidics

We specialize in custom microarray printing, lab-on-a-chip integration, and liquid handling robotics, offering precise droplet control and optimized fluidic workflows for research, diagnostics, and industrial automation.



Regulatory Compliance & CE Marking

We provide support to achieve RUO-CE Marking by ensuring compliance with:

- **Electromagnetic Compatibility (EMC) Directive (2014/30/EU)**
- **Low Voltage Directive (2014/35/EU)**
- **RoHS (2011/65/EU & 2015/863) – Restriction of Hazardous Substances**

Why Work with Us?

- Experience Across Multiple Industries: **Biotechnology, aerospace, semiconductors, and renewable energy.**
- End-to-End Product Development: **From prototyping to full-scale production.**
- Access to Advanced Facilities & Engineering Expertise: **Delivering cutting-edge solutions with reliability and speed.**

Do you have an engineering challenge? Let's turn it into a solution! Contact us to discuss your project.