



**GWENT GROUP**  
ADVANCED MATERIAL SYSTEMS

# Screen Printing at GEM Ltd



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# Overview

- **Facilities**
- **Screen Design**
- **Examples**
- **Applications**



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# Screen Printing Facilities

- **Research / Production**
- **Handprinting(DEK 65)**
- **Semi-automatic (DEK 1202, 245)**
- **Production (DEK 248)**
- **Class 1000 clean room**
- **Drying and UV cure ovens**



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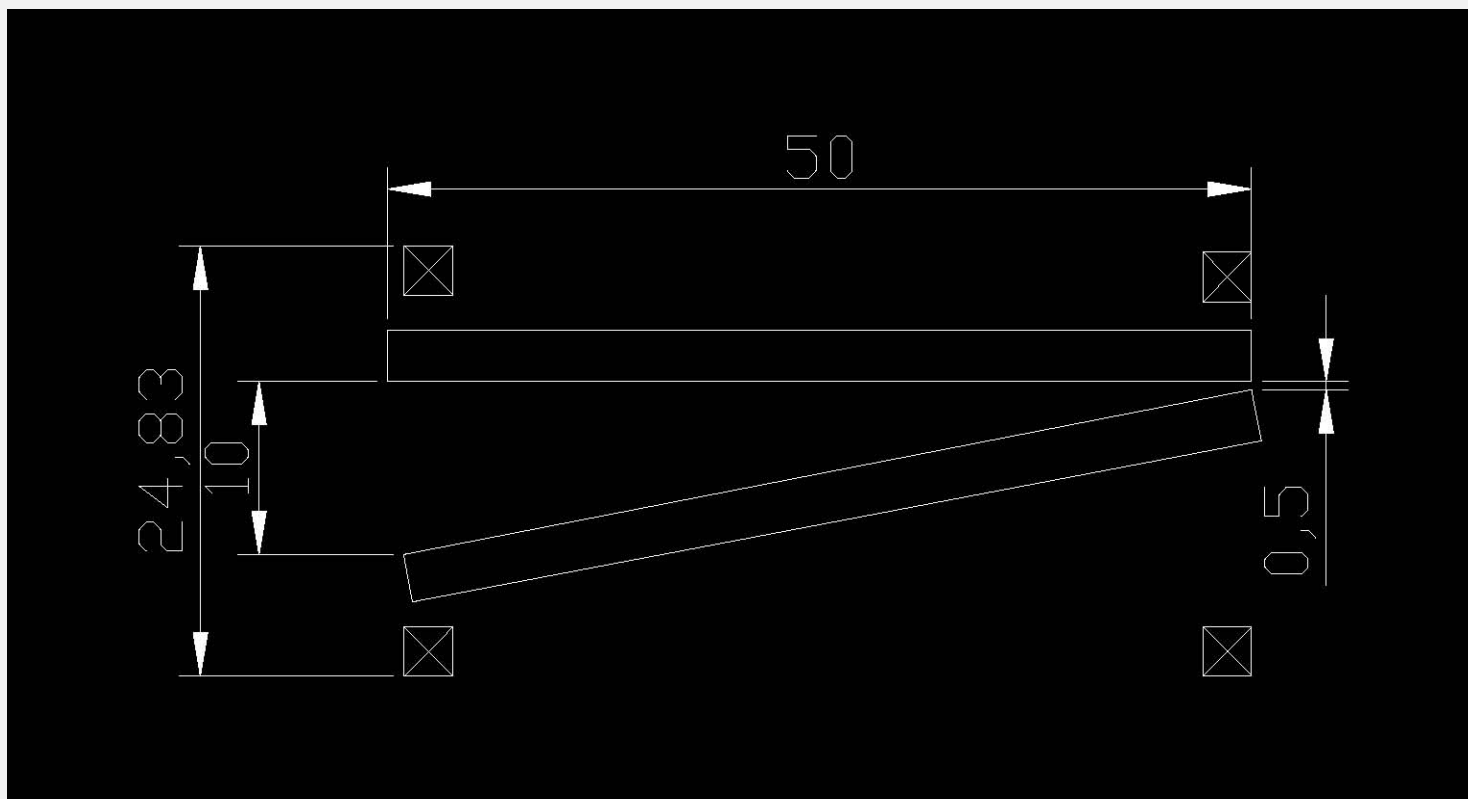
# Screen Design

- **AutoCAD system for artwork generation**
- **Rapid prototyping**
- **Facilitates communication**



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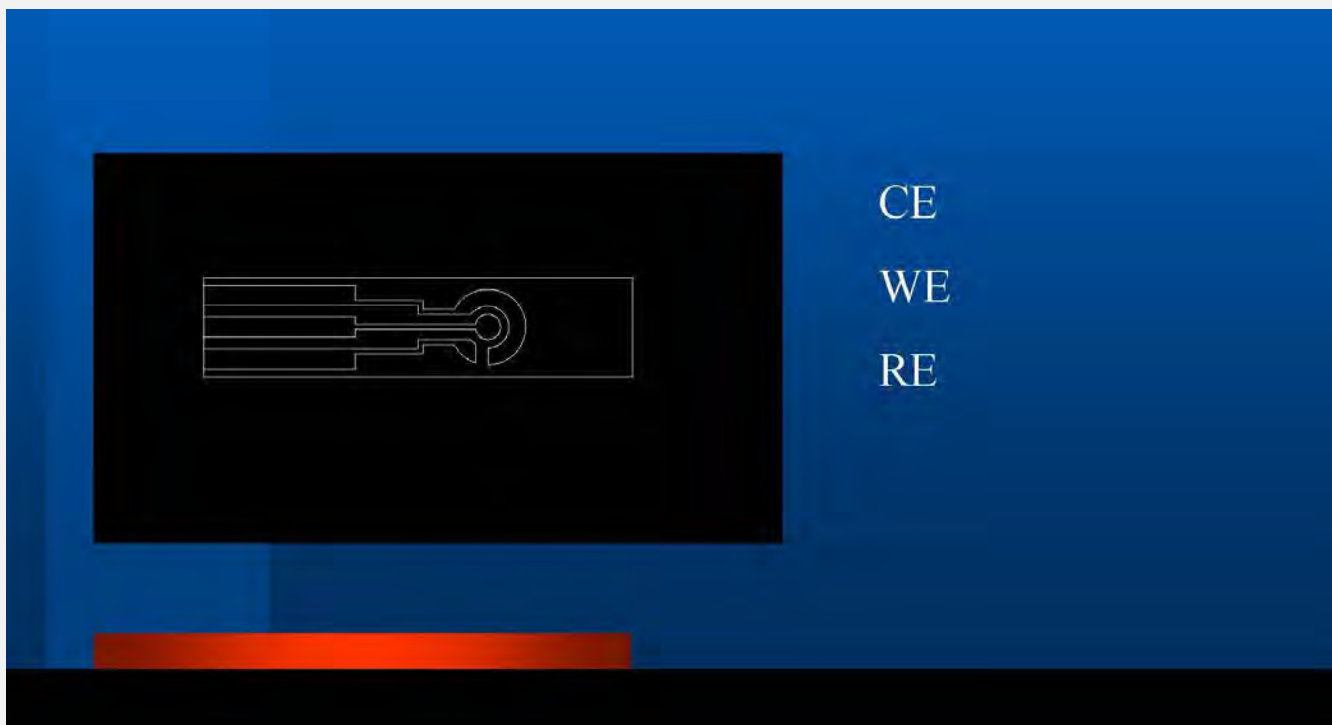
# Examples simple 2 electrode





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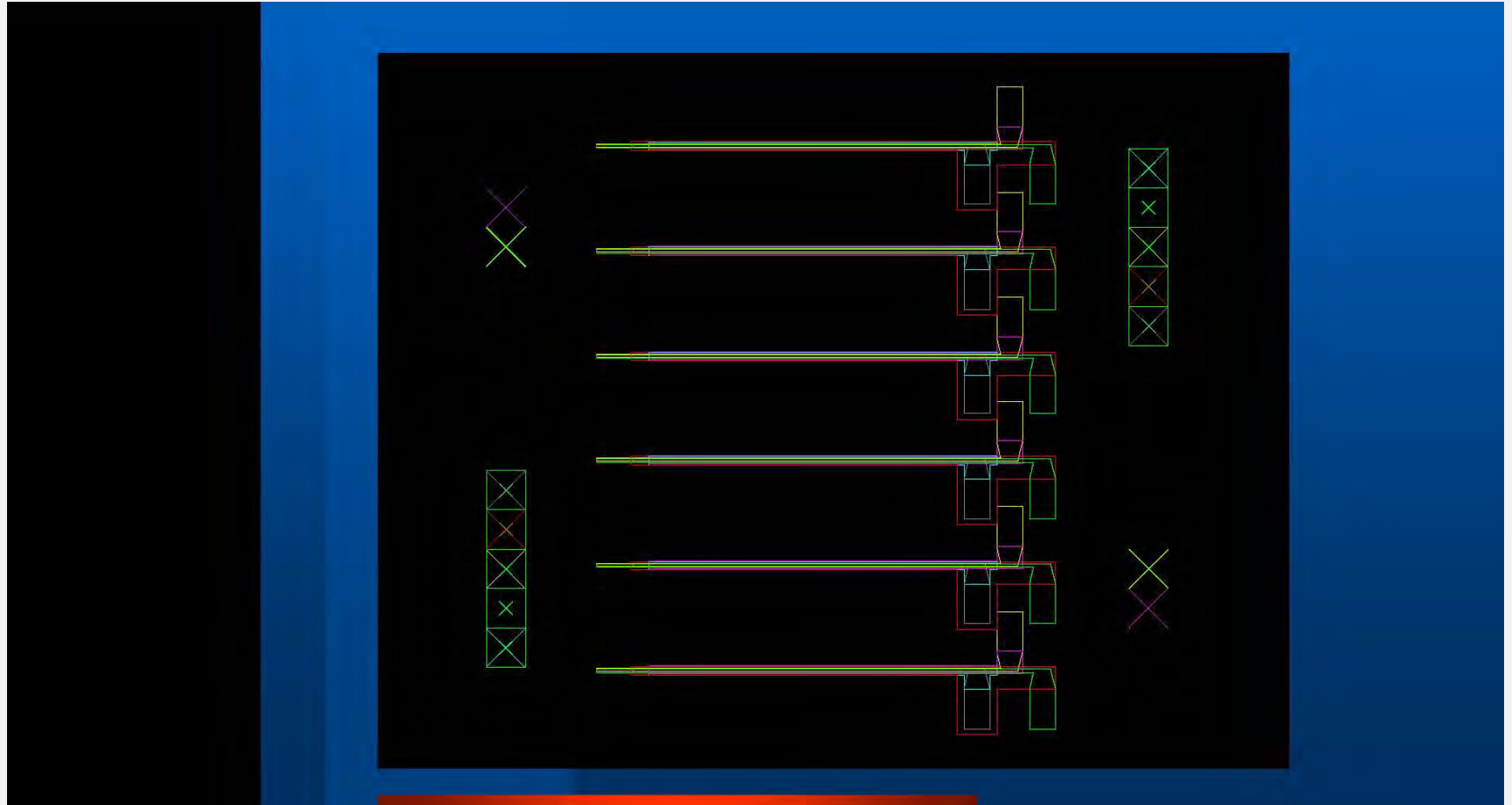
# Examples simple 3 electrode





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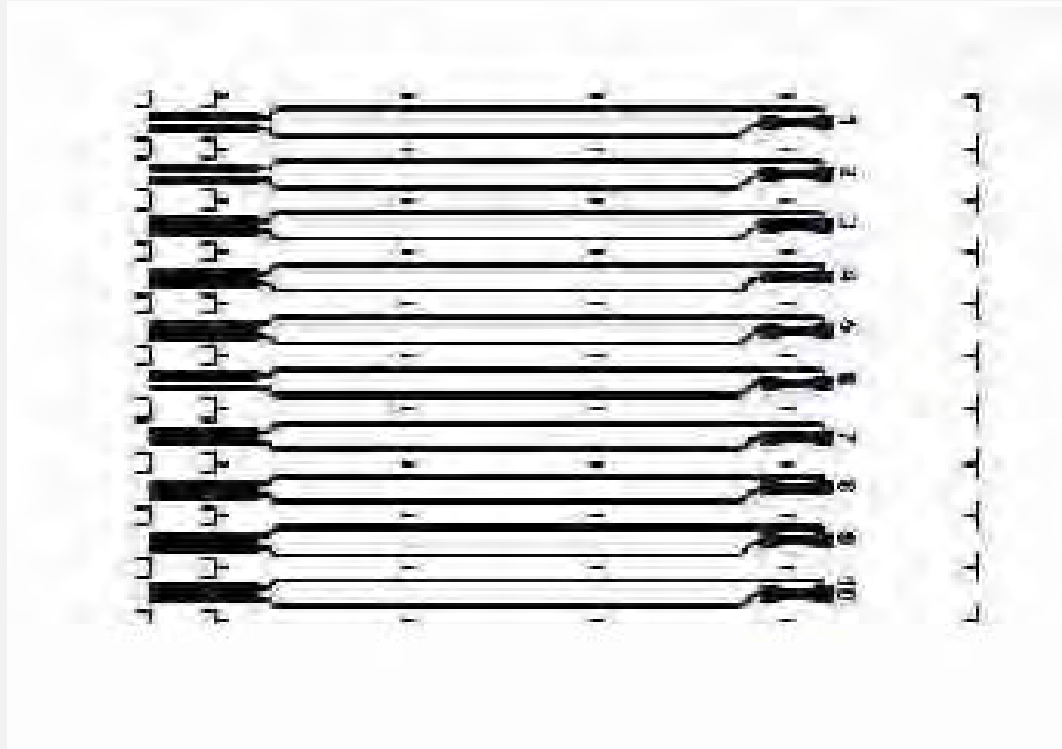
# Examples complex sensor





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# Examples array

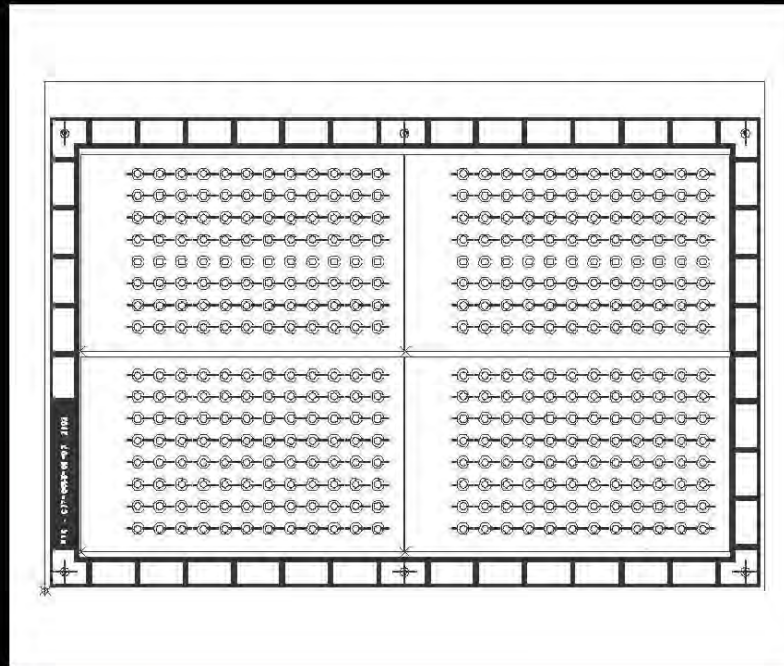






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# Examples array





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# Applications I

- **Materials testing  
(internal)**
- **Biosensors**
- **Food**
- **Environment**
- **Medical**



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# Applications II

- **Biomedical/ Pharmaceutical**
- **ECG monitoring**
- **High Throughput Screening**
- **DNA sequencing**
- **Sensors**
- **Gas**
- **Automotive**



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# Summary

- **Printing capability for ~1million sensors a month**
- **Integration of materials development with sensor design and production**
- **Rapid Development**



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