

### ORGANIC ELECTRONICS SAXONY – LEADING CLUSTER IN EUROPE





### **Organic and Flexible Sensors in Applications**

**Dominik Gronarz** 





### **OUR VISION**

### WE CREATE BENEFIT THROUGH APPLICATION BEYOND CLASSICAL ELECTRONICS

- Cross the Limits of "Classical Electronics"
- Open new fields of Applications for Electronic Devices
- Electronics in previously unexplored fields





#### **OES Value Chain INDUSTRIAL DEVELOPMENT & PRODUCTION** unic novaled 🍢 Heliatek ເກເກ **ΔCCOШ Γ** Adenso solutions you need creavac Heraeus PLASTIC LOGIC CONTRONIX DER BLICK FÜRS GANZE **3D**MICROMAC SYNTHON **TES**frontdesign CHEMICALS Kurt J. Lesker SEMPA LS Latelying stortes **SE//ORICS** WOLFRAM DESIGN/ENGINEERING VON ARDENNE 🖌 **PROCESS INTEGRATION** PRODUCTION APPLICATIONS & SERVICES **TECHNOLOGIES** ..... IAVTI 🜌 Fraunhofer pm IWS Leibniz-Institut für Polymerforschung Dresden e. V. Fraunhofer IVV Bauhaus-Universität Weimar Fraunhofer Fraunhofer PHYSIKALISCHE CHEMIE FEP Fraunhofer Organische IHM Laserinstitut Hochschule Mittweida Bauelemente ENAS **BASIC & APPLIED RESEARCH**





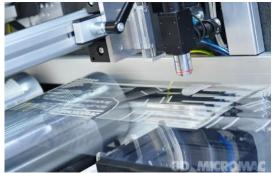
### Technologies behind the Applications

#### New Materials & Synthesis



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### Laser Micro-Structuring



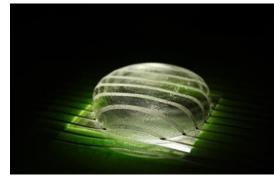
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#### Printing Processes



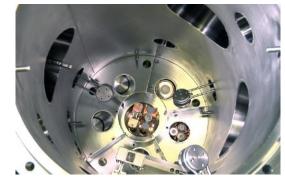
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### Thermoformed 3D-Electronics



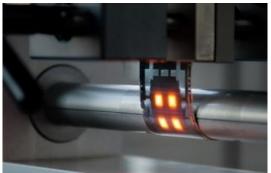
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#### Vacuum-Processing



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### Encapsulation & Barriers



© Fraunhofer FEP





### **Devices and Applications**

flexible displays



© Plastic Logic

#### flexible battery

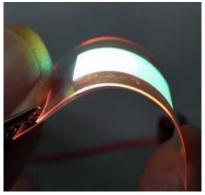


### printed OLED



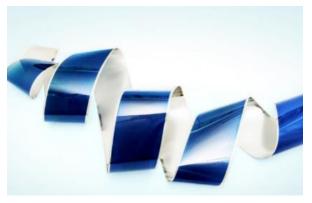
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### flexible OLED



© Fraunhofer FEP

### flexible solar film



© Heliatek

### flexible sensors



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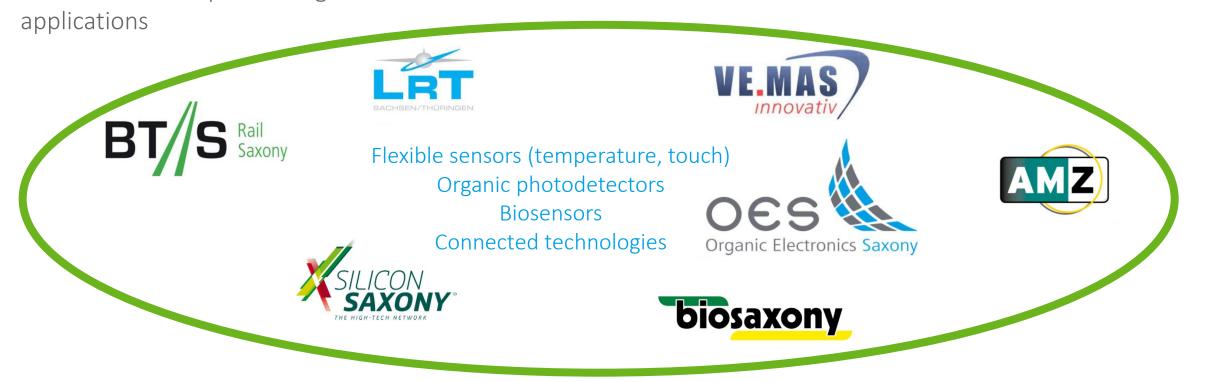




# Sensor activities with flexible organic electronics in Saxony

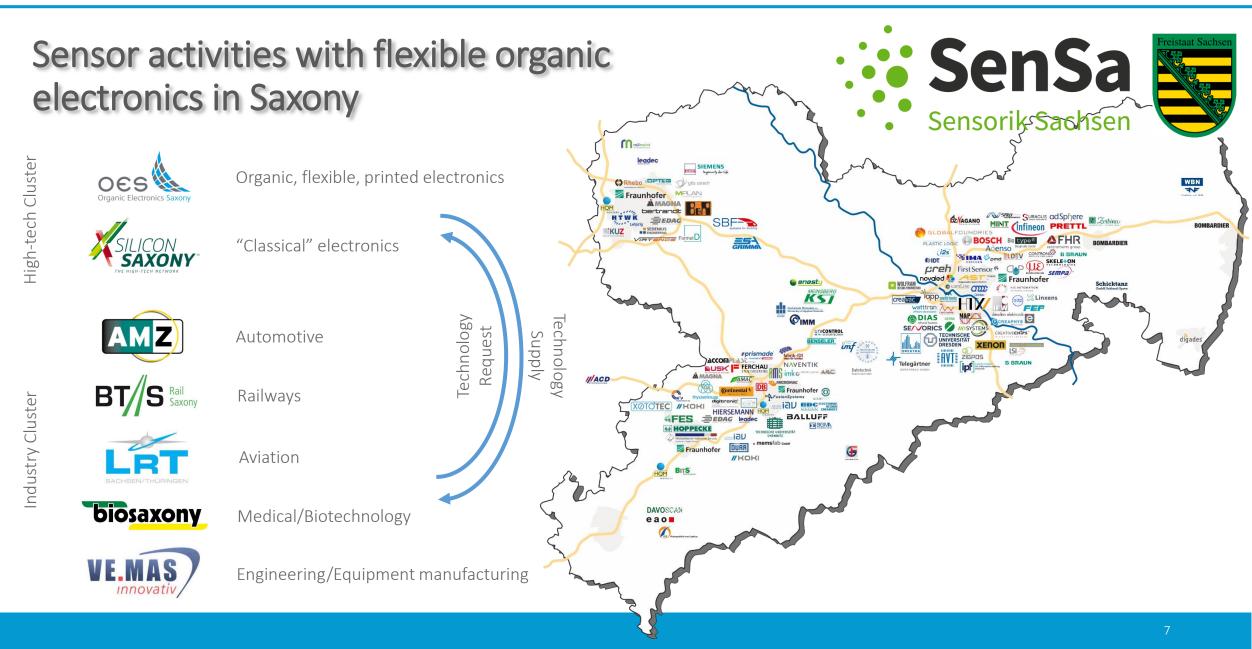
Cross-Cluster cooperation with Saxony industry and technology clusters to develop and integrate flexible electronics in sensor applications















### Summary

- Various kinds of sensors with flexible/organic technology already available
- Products outperform traditional solutions in price, energy consumption or performance
- New functionalities possible
- Technologies are ready; next steps are integration, implementation, upscaling





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