US Photonics is a world leader in creative laser macro/nano machining. Our techniques are used in combination with nano materials and coatings for the creation of new products. This unique combination allows us to create cutting edge technologies for use in the Bio-Medical, Micro-fluidics, and Defense fields. Some of the largest corporations in the world come to us when they are trying to produce something seemingly impossible or they need products developed quickly. We are an agile organization and can react immediately with creative minds to solve the most difficult products.

We specialize in taking an idea and moving it quickly from concept to reality. We design, build, and create fiber optic sensors, apply nano coatings, and create MEMS devices. We are currently working on a nano-battery project through the NSF. We have applied for several patents involving our expertise in the fields of nano-batteries and super capacitors. We plan to be the first company in the world to build true nano-sized battery cells.

US Photonics has the ability to coat and pattern thin films and perform various surface treatments from sol-gel dip coating, spin coating, electroplating, electro-polishing, anodizing, electro-phoretic deposition, micro-abrasive blasting, surface grinding, chemical etching, lithography, multi-photon polymerization, and powder coating. Through our partnership with the JVIC facility, we also have the ability to perform pulse laser deposition and have capabilities to do e-beam and thermal evaporation, sputtering, and chemical vapor deposition.

We also have the ability to do various bonding and welding techniques for MEMS applications, including glass to silicon frit bonding.

524 North Boonville
Springfield, MO 65806
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Fx: 877-787-3912
Email: kevin@usphotonics.net
**Technical Areas of Expertise**

- Laser Micromachining
- Experimental Design & Modeling
- Nano Material Coatings
  - Solgels, Pulse Laser Deposition,
  - Carbon Nano-Tube Flow/Dip/Spin Spray Coating
- Direct Write Lithography Using Femtosecond Laser
  - Precision Writing to Substrate Using Laser
- Multi Photon Polymerization
  - 3D Rapid Modeling of Prototypes Micro/Nano Scale
- MEMS Device Design & Prototyping
- Optical Design, Electro-optics Including
  - Active 3D Waveguides
- Thin Film Patternning & Lithography
- Fiber Optic Sensors & Fiber Laser Design

**Facilities & Equipment**

**Inspection Equipment**

- Femtosecond Laser Machining Center
- Nanosecond YAG Laser
- Diamond Saw
- Copper Vapor Laser
- Fiber Optic Polishing, Lapping, Connectorizing and Inspection

- Atomic Force Microscope
- Confocal Microscope
- Hitachi SEM

**Micro Machining Equipment**

- Solidworks 3D Modeling
- Autocad
- Inventor
- Eagle Cad for PCB Design

**Design Software**

- AutoCAD
- Inventor
- Solidworks 3D Modeling
- Eagle Cad for PCB Design

**Federal Nomenclatures**

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**Affiliations**

- Jordan Valley Innovation Center
- Springfield Chamber of Commerce
- Missouri Petac
- UMR
- Missouri State University
- SPIE

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