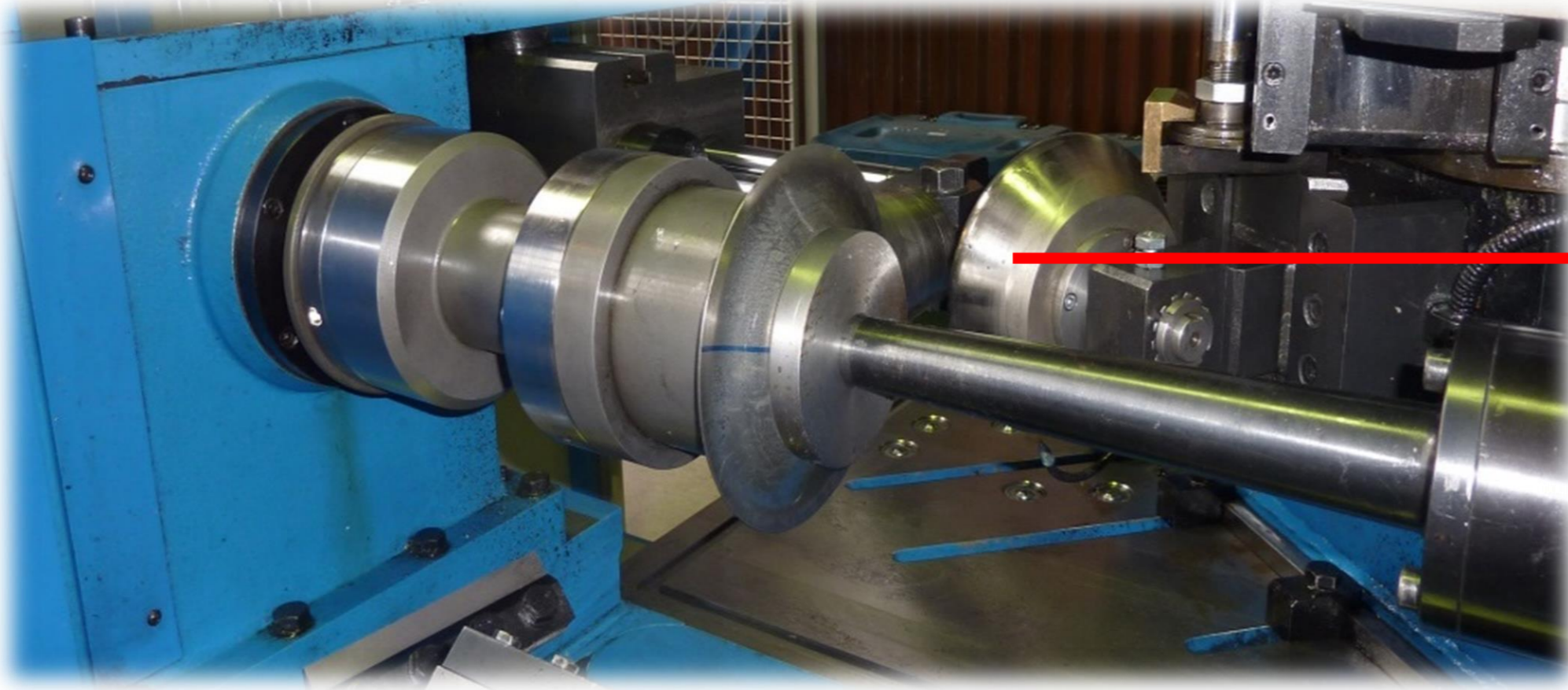
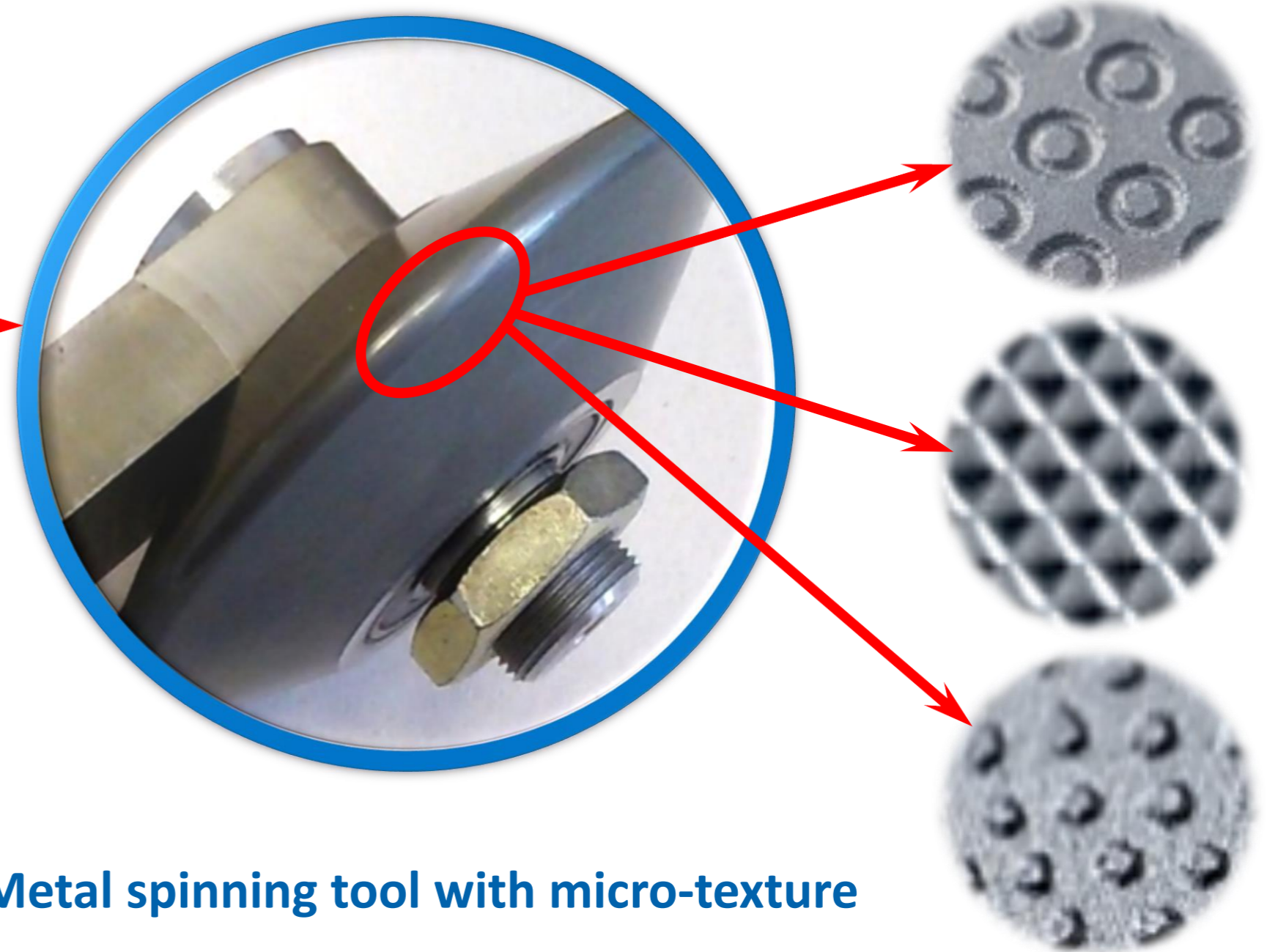


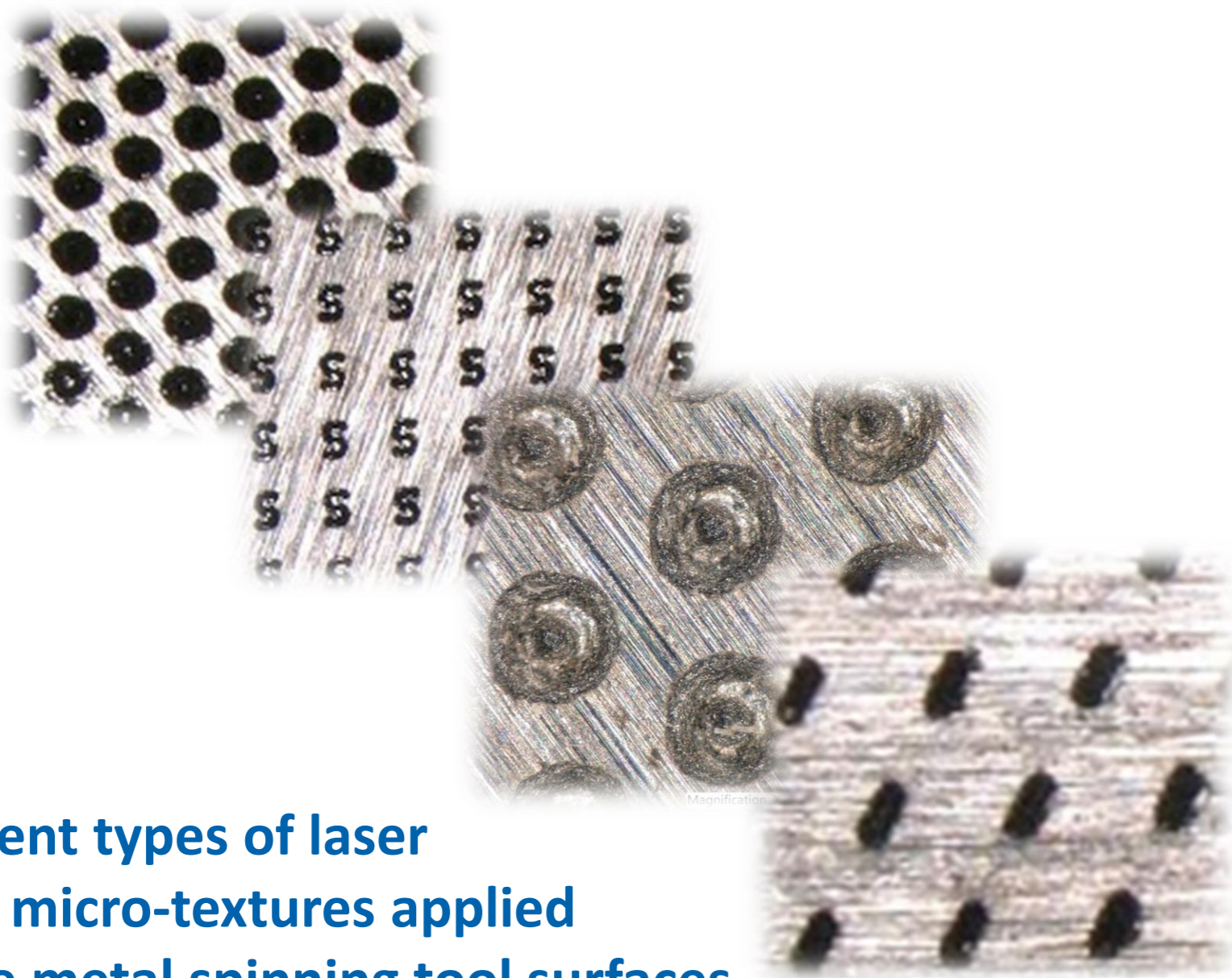
# LASER TEXTURED METAL SPINNING TOOL



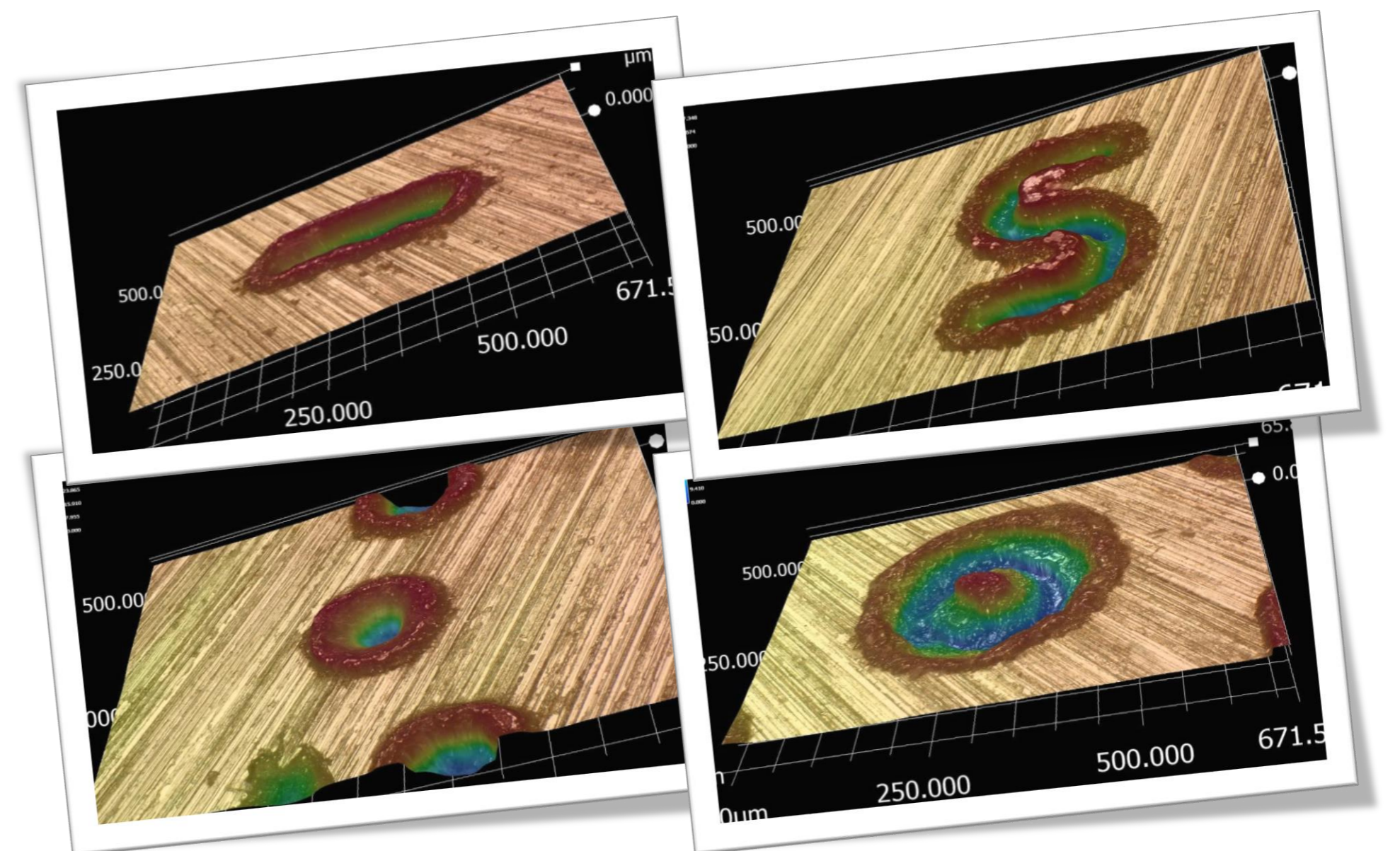
CNC conventional metal spinning process



Metal spinning tool with micro-texture



Different types of laser made micro-textures applied on the metal spinning tool surfaces



**Laser surface texturing (LST)** technology has a justification in modifying the properties of the active surfaces of the metal forming tools (die cavities, rollers of the rolling mills), where it functions as a surface relief (surface pattern) or its role is to influence the surface tribological characteristics in a positive way and to minimize the intensity of the tool degradation changes in order to extend the tool life.

There is evidence, that this can also have a beneficial effect for full film lubrication during the processes of conventional metal spinning, but optimization of the texture parameters, including texture element shape, dimensions, pattern and texture density, is required.

A new type of surface micro-texture has been developed for improvement the utilization properties of CNC metal spinning tools (rollers), taking into account the specific conditions of rolling friction occurring during the process. It brings next benefits:

- ↪ **improvement of the hydrodynamic lubrication at the spinning tool – formed part interface with positive impact on environment,**
- ↪ **minimization of process energy consumption,**
- ↪ **increasing of the tool life,**
- ↪ **positive influence on the surface integrity of produced formed parts.**

**Protection of the technology is ensured by an application of utility model on newly developed type of the surface micro-texture for metal spinning tools surfaces improvement.**