

Void-free metallic diffraction gratings for enhanced X-ray interferometry imaging

Patent 11,579,344

Description

Problem:

Improvement is needed in X-ray phase contrast imaging systems for better imaging outcomes for soft tissues without the need for radioactive contrast agents.

Invention:

A metallic diffraction grating with recessed features that are optimized for metallic void-free filling by electro-deposition.

CONTACT

Technology Partnerships Office (TPO)
National Institute of Standards and
Technology Gaithersburg, MD 20899
licensing@nist.gov

*Also see patent 10,889,908 and
patent application 17/972,816*

Benefits

Commercial Applications:

- X-ray interferometry
- X-ray phase contrast imaging
- X-ray wave-front-sensing
- Optics characterization
- Optics alignment
- Focus characterization at X-ray free-electron lasers (XFELs)
- Biomedicine
- Materials Science
- Security

Competitive Advantages:

- Minimal deposits on the field
- Reduction in post-deposition processing time.
- Void-free filled recessed feature with
- highly uniform filling profiles.

