

System and Method for Manipulating an Object for Imaging

 Communications & Information

 Health & Wellness

 Manufacturing

Computer/AI/Data Processing and Information Technology

Opportunity

The ability to image small objects with a high degree of magnification and a large view area is critical for many industries, as imaging can assist with both detecting defects and precisely manipulating objects. Microscopic imaging techniques have been widely used to provide this kind of imaging. However, most existing microscopy systems can only image from one fixed direction. As a result, other surfaces on an object are not imaged, and this results in a loss of information. More importantly, the information obtained from a single surface is usually incomplete. This invention provides a methodology for manipulating an object within microscopic imaging so that the object can be viewed from a variety of angular positions. This greatly enhances the data that the imaging process can provide.

Technology

This invention is a method for manipulating an object for imaging by an imaging device. In this methodology, the object can be rotated on an axis into a variety of positions, while an image of said object can be captured from each of these positions. The invention also involves a methodology for calculating the necessary alignment of the object in each position so as to best capture an image of the object's surface. This new methodology focuses on the mechanics of displaying an object and the mathematical calculations necessary for manipulating an object so as to achieve the best angle for imaging. However, this methodology can be most effectively utilized for an assembly in which a controller provides instructions to a robot.

Advantages

- This invention will allow imaging devices to capture greater information about object surfaces.

IP Status

Patent granted



Technology Readiness
Level (TRL) ?

6

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Follow-on
Funding

Develop
Concept

Proof
Concept

Build Value

- This information also allows imaging devices to observe an object from a variety of perspectives.

Applications

- Microbiology
- Nanotechnology
- Chemical industry
- Regenerative medicine

