



Quantum Design
UK AND IRELAND

4D Technology

An Onto Innovation Subsidiary

DYNAMIC INTERFEROMETRY FOR METROLOGY WORKSHOP

AGENDA

MARCH 16 2023

VENUE: GOFOD ROOM, OPTIC TECHNOLOGY CENTRE, GLYNDWR UNIVERSITY

09:00 **REGISTRATION AND COFFEE**

09:25 **INTRODUCTION TO QUANTUM DESIGN UK AND IRELAND AND 4D TECHNOLOGY**
DR LUKE NICHOLLS, QUANTUM DESIGN UK AND IRELAND

09:30 **INTRODUCTION AND OVERVIEW OF DYNAMIC INTERFEROMETRY**
GREG MAK SINCHUK AND DR ERIK NOVAK, 4D TECHNOLOGY

- BASIC INTERFEROMETRY OVERVIEW: HISTORY, SYSTEM CONFIGURATIONS, MEASUREMENT MODES
- THE EVOLUTION OF DYNAMIC INTERFEROMETRY: HISTORY, METHODOLOGIES, SYSTEM CONFIGURATIONS

10:00 **CONSIDERATIONS AND CHALLENGES IN DYNAMIC INTERFEROMETRY**
GREG MAK SINCHUK AND DR ERIK NOVAK, 4D TECHNOLOGY

- ERROR SOURCES IN DYNAMIC INTERFEROMETRY: CALIBRATION AND MITIGATION OF ENVIRONMENTAL EFFECTS
- CHALLENGES OF DYNAMIC INTERFEROMETRIC INSTRUMENT DESIGN
- THE IMPORTANCE OF UNDERSTANDING INSTRUMENT TRANSFER FUNCTION

11:00 **COFFEE BREAK AND NETWORKING**



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11:20 **APPLICATIONS OF DYNAMIC INTERFEROMETRY**

GREG MAKSYCHUK AND DR ERIK NOVAK, 4D TECHNOLOGY

ENABLING METROLOGY FOR THE JAMES WEBB SPACE TELESCOPE

- UTILISING 4D DYNAMIC INTERFEROMETRY FOR GROUND AND SPACE-BASED TELESCOPE MANUFACTURING
- DYNAMIC INTERFEROMETRY IN THE OPTICS SHOP
- IMPROVED INTERFEROMETRIC CONFIGURATIONS FOR SUPERIOR TESTING OF INFRARED COMPONENTS AND SYSTEMS
- USING SHORT COHERENCE DYNAMIC INTERFEROMETRY TO ENABLE MEASUREMENT OF THIN AND PLANE-PARALLEL OPTICS
- PORTABLE, ROBOT-MOUNTED SURFACE ROUGHNESS MEASUREMENTS
- HAND-HELD DYNAMIC INTERFEROMETRY FOR DEFECT, CHAMFER AND EDGE BREAK ANALYSIS
- IN-SITU BIOLOGICAL APPLICATIONS FOR DYNAMIC INTERFEROMETRY
- PORTABLE MEASUREMENT SYSTEMS FOR AUTOMOBILE QUALITY ASSURANCE

13:00 **LUNCH FOLLOWED BY OPTIONAL TOUR OF LABORATORY** – PLEASE PUT YOUR NAME DOWN AT REGISTRATION

14:15 **USER TALK**

PROF. PAUL REES, OPTIC TECHNOLOGY CENTRE, GLYNDWR UNIVERSITY

14:45 **DEMONSTRATIONS/MEASUREMENTS**: CUSTOMER SAMPLES ARE WELCOME (COFFEE BREAK AT 15:15)

16:30 **DISCUSSIONS AND CLOSE**