



25th Target Fabrication Specialists Meeting

Meeting Sessions to start promptly at 8:00 AM Daily

Host Organization:



Thank you to our Platinum & Gold sponsors:

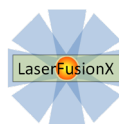


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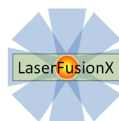
Meeting Sessions to start promptly at 8:00 AM Daily

Link to Expected Paper Submissions



<https://www.ga.com/target-fabrication-meeting-2024/paper-submissions>

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Sunday, August 25th, 2024

Registration and Reception

| | |
|----------------|---|
| 6:00 – 9:00 PM | Registration/Reception <i>Reminder: Bring Passport/Green Card/DOE Badge/GA badge for citizenship verification</i> Location: Palm Terrace at the Bahia Resort Hotel 998 West Mission Bay Drive San Diego, CA 92109 |
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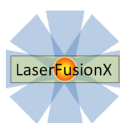
Monday, August 26th, 2024

Conference Day 1

Conference Location: Mission Bay Ballroom

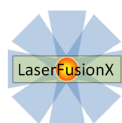
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| 6:45 – 7:45 AM | Breakfast (provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |
| Session 1 Plenary Talks Session Chairs: Don Czechowicz, John Rawls, GA | |
| 8:00 AM | Welcome/Remarks from General Atomics Linden P. Blue, GA |
| 8:05 AM | The Historic 25 th Target Fabrication Specialists Meeting John Rawls, GA |
| 8:20 – 9:00 AM | How we got thermonuclear fusion without fission Omar Hurricane, LLNL |
| 9:00 – 9:40 AM | Technological Advancements Enabling Fusion Ignition on NIF Gordon Brunton, LLNL |
| 9:40 – 9:55 AM | Break |
| Session 2 Plenary Talks Session Chair: Mike Farrell, GA | |
| 9:55 – 10:35 AM | Target Fabrication after Ignition Michael Stadermann, LLNL |
| 10:35 – 11:15 AM | Metrology Contribution to Ignition Haibo Huang, GA |
| 11:15 – 11:55 AM | Laser-Direct-Drive Experiments on OMEGA Contributing to Ignition and High Yield Sean Regan, LLE |
| 12:00 PM | Group Photo |
| 12:00 – 1:00 PM | Lunch Break (Provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |

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| Session 3 Plenary Talks | |
| Session Chair: Nigel Martin, AWE | |
| 1:00 – 1:40 PM | Prospectus on Inertial Fusion Energy Cliff Thomas, LLE |
| 1:40 – 2:10 PM | Current & Future Capabilities in Target Fabrications Andy Spencer, AWE |
| 2:10 – 2:40 PM | Progress and Perspectives in LMJ Target Fabrication Virgile Bernigaud, CEA |
| 2:40 – 5:00 PM | Break and Poster Session I |
| Poster Session I | |
| M. Aggleton (1) | CFTA Fill Rate Study |
| J. Alcala (2) | Overview of Capsule Fill Tube Assembly (CFTA) articles and qualifying processes |
| E. Alfonso (3) | Capsule Laser Drilling Progress and Improvements |
| M. Arend (4) | Target Fabrication Machining Facility Upgrades |
| S. Astbury (5) | Tape Targetry to Enable High Repetition Rate High Power Laser Experiments |
| B. Berry (6) | Helium Leak Detection and Testing for Capsule Fill Tube Attachments |
| N. Bhandarkar (7) | Optimization of VISAR Mirror for NIF Targets |
| C.A. Blough (8) | Machining Process for LANL Bosque Shells |
| R. Botrel (9) | Development of a specific electroplating process for the manufacturing of thin-walled hohlraum |
| R. Chow (10) | Advances in Fabrication Methods for Evolving Target needs |
| C. Clary (11) | Long Distance Transport Analysis for an Ignition Experiment Capsule Fill Tube Assembly (CFTA) |
| S. Diaz (12) | X-ray Sagometer Process for Cryogenic Targets |
| M. Do (13) | 2PP Printing of 3D Deuterated Plastic Lattices: Challenges and Optimization |
| D. Goodelman (14) | Diamond-like carbon (DLC) coatings prepared by pulsed plasma physical vapor deposition |
| B. Farhi (15) | Cryogenic Planar Ablation: Testing and Fabrication |
| S. Fess (16) | Printed Targets with Sub-micron Feature Patterns for the Study of Ablator Defects |
| J.-B. Forien (17) | Improving geometrical uniformity of ablator capsules using monitoring during coating process |
| M. Havre (18) | DU Hohlraum Leaching Improvements |
| J. Crabtree (19) | Techniques for fielding Kr-Doped Deuterium Ice and Ice Shell in ICF Targets |

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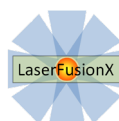
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| S. Irving (20) | Target Manufacture for Shock Tube Geometries and Astrophysical Shock Experiments |
| A. Jara (21) | Nanostructured Targets |
| J. Jestine (22) | Investigations into PolyHIPE contamination and analysis of low chlorine content foam |
| S. Karim (23) | Advancements of Complex Target Manufacturing Efforts at Laboratory for Laser Energetics (LLE) |
| C. Kong (24) | HDC Leaching Cleaning Experiments |
| J. Kroll (25) | Ignition Target Baseline Design for Indirect Drive Ignition Experiments on the National Ignition Facility (NIF) |
| M. Lament (26) | Developing Manufacturing Techniques for the Equation of State Campaign |
| N. Lau (27) | The Development of Compound Parabolic Concentrators (CPC) |
| J. Lavelle (28) | Omega CyIDRT Fabrication Process |
| L. Leal (29) | Cryogenic Target Diagnostic Band Subassemblies and Target Shielding for Laser Experiments at NIF |
| X. Lepro (30) | Changes in Fill Tube Curvature during Target Assembly |
| S. LeTacon (31) | Capsule with controlled roughness for turbulence laser experiments |
| B. Levay (32) | Use of Dragonfly Software for HDC Drill Hole Analysis |
| C. Liberatore (33) | Development of Mixed Foams for NIF Hohlräum Wall Heating Experiments |
| D. Malone (34) | Measuring bond strength of CFTA at cryogenic temperatures |
| T. Marcotte (35) | Evolution of Equation of State (EOS) Target Design and Assembly |
| W. Montgomery (36) | Fabrication of First Lead & Depleted Uranium Laser Entrance Hole (LEH) Insert for Viewfactor Campaign |
| A. Murphy (37) | Developments in HiZ PP Fabrication |

Tuesday, August 27th, 2024

Conference Day 2

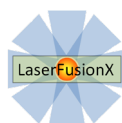
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| 6:45 – 7:45 AM | Breakfast (provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |
| Session 4: Ignition Targets Session Chair: Michael Stadermann, LLNL | |
| 8:00 – 8:20 AM | Overview of HDC Capsule Processing Mark Ratledge, GA |
| 8:20 – 8:40 AM | High Z and Petal Defect Identification and Metrology in High Density Carbon Capsules for Ignition Shots on NIF |

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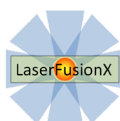
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| | Abbas Nikroo, LLNL |
| 8:40 – 9:00 AM | GA Component Fabrication Supporting Ignition Targets Mike Mauldin, GA |
| 9:00 – 9:20 AM | Target Engineering Post-Ignition Scott Winters, LLNL |
| 9:20 – 9:40 AM | The Advancement of a Cationic Capsule Fill Tube Assembly (CFTA) for The National Ignition Facility (NIF) Jay Crippen, GA |
| 9:40 – 10:00 AM | Improvements to high density carbon capsule quality and availability for the inertial confinement fusion program Sal Baxamusa, LLNL |
| 10:00 – 10:15 AM | Break |
| Session 5: Capsules | |
| Session Chair: Sean Regan, LLE | |
| 10:15– 10:35 AM | Overview of Omega Capsule Fabrication for Direct Drive at General Atomics Claudia Shuldberg, GA |
| 10:35 – 10:55 AM | Improvement of Capsule Mode 1 through Experimentally-Enhanced Monte Carlo Modeling Sean Hayes, LLNL |
| 10:55 – 11:15 AM | Correlation of Macroscopic and Microscopic Properties of Tungsten Doped Nanocrystalline Diamond Coatings Juergen Biener, LLNL |
| 11:15 – 11:35 AM | Effects of Pyrolysis on Glow Discharge Polymer (GDP) Capsules Anthony Allen, GA |
| 11:35 – 11:55 AM | PAMS mandrels synthesis improvements Pauline Valois, CEA |
| 12:00 – 1:00 PM | Lunch Break (Provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |
| Session 6: Metrology | |
| Session Chair: Sal Baxamusa, LLNL | |
| 1:00 – 1:20 PM | 4PI Wall Thickness Measurements of HDC and GDP capsules Pasha Lapa, GA |
| 1:20 – 1:40 PM | Tender X-ray microtomography at the Advanced Light Source Jean-Baptiste Forien, LLNL |
| 1:40 – 2:00 PM | Working to Improve the Dimensional Quantification of Target Metrology from X-ray CT Imaging Brian Patterson, LANL |
| 2:00 – 2:20 PM | Development of Soft X-Ray Metrology Equipment for X-Ray Opacity Database Revision Ruben Santana, GA |
| 2:20 – 2:40 PM | Digital Holographic Surface Metrology for HED Capsules Kevin Sequoia, GA |

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| 2:40 – 3:00 PM | Characterization Capabilities of Target Fabrication at Orion Jebin Jestine, AWE |
| 3:00 – 5:00 PM | Break and Poster Session II |
| Poster Session II | |
| A. Nikroo (40) | Sub-micron Glue Thickness Measurement & Uncertainty Determination for Dynamic Material Expts on NIF |
| A. Nunez (41) | High Precision Machining of Hard-to-cut materials with the Ultrasonic Tooling Systems |
| C. O'Connor (42) | Capabilities and Challenges of the Target Fabrication Science team at AWE/Orion |
| D. Orozco (43) | Defect Detection for ICF Capsules using Deep Neural Networks |
| M. Hoppe (44) | Smooth High at% SiCH and Ultra-thin SiCH Capsules |
| I. Ruiz (45) | Reducing Oxygen Absorption in Si-Doped GDP Capsules by Improving Storage Conditions |
| D. Paras (46) | Overview of Diagnostic Assemblies in a Complex Hydro Target |
| A. Pastrnak (47) | Fabrication of Metal-to-Metal Interface Targets for Material Strength Experiments |
| B. Paul (48) | Thin Film Metrology and Processing Improvements at Luxel Corporation |
| April Perez (49) | Thin Film (tent) Preparation and Target Tenting in Support of Production and R&D Efforts |
| T. Phipps (50) | Overview of new GA machined target component designs |
| M. Ponce (51) | Assembly of Visar and 1DConA ESPADA Targets for the HED ESPADA Campaign |
| T. Quintana (52) | Foam Characterization at LANL Using Computed Tomography |
| O. Raphael (53) | Assembly and Characterization of EOS Targets for LMJ Experiments |
| T. Reuter (54) | Techniques for Increasing Foam, Plastic, and Foil Yield |
| M. Rich (55) | Identification of Voids & Inclusions in Z Targets |
| C. Richardson (56) | Impedance Match and Hohlräum development |
| J. Riddles (57) | Target Fabrication of Colliding Planar Shock Targets |
| K. Rivadeneira (58) | Enhancing Yield and Performance Through Process Engineering in Target Fabrication |
| N. Roskopf (59) | Utilizing Creo Parametric IGES Files to Automate Target Specification Sheets |
| D.J. Ross (60) | Gradient Coating of Cylindrical Targets |
| S. Pajoom (61) | 4PI Pre-Screen Process Improvements |
| A. Schwartz (62) | Examining the Degradation of Depleted Uranium Layered Hohlräume |
| R. Smith (63) | Polymer Selection for Target Fabrication |
| L. Sohngen (64) | Investigation of Titanium as a Surrogate Material for Magnetron Sputtered Beryllium |

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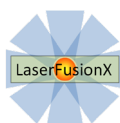
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| S. Stadermann (65) | Metrology of shielded ARC targets using mirror reflection in OCMM |
| S. Stringfield (66) | Development of 2PP Lattices & AR Coatings for use in Bosque Shock Imprint & Bosque Preheat |
| J. Stutz (67) | Laser Micromachining Process for Pinholes and Collimators Used for X-Ray Imaging |
| J. Taylor (68) | Z-Machine Cryogenic Target Performance Advances and Innovations |
| G. Taylor (69) | Boron carbide coatings deposited with HiPIMS |
| N. Thompson (70) | (Re)Development of a CFTA Production Station at LLNL |
| K. Tomlinson (71) | 4-Axis Milling of Planer Targets For Dynamic Materials Properties Experiments |
| T. Uphill (72) | Innolite 500 Sinewave Project |
| I. Usov (73) | Detailed analysis of opacity foils areal density uncertainties by Rutherford Backscattering Spectrometry |
| N. Vargas (74) | Overview Diamond Like Carbon Coatings |
| D. Wasilewski (75) | 3D PRINTING CAPABILITIES USED BY TARGET FABRICATION AT THE LABORATORY FOR LASER ENERGETICS |
| M. Weir (76) | Overview of Coating Fabrication Capability Expansion at General Atomics |
| C.H. Wong (77) | Development of Aerogels and Foams for LANL Target Assembly |
| J. Wu (78) | Capsule Data Improvements |
| R. Luo (79) | Fabrication and Characterization of Shimmed Capsules for OMEGA Experiments |
| J. Murray (80) | Hoppe Glass Shells Properties Synopsis |

Wednesday, August 28th, 2024

Conference Day 3

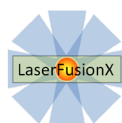
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| 6:45 – 7:45 AM | Breakfast (provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |
| Session 7: Novel Targets & Assemblies Session Chair: Derek Schmidt, LANL | |
| 8:00 – 8:20 AM | LANL Target Fabrication and Development Derek Schmidt, LANL |
| 8:20 – 8:40 AM | Target Production in Support of Z Pulsed Power Experiments Reny Paguio, GA at SNL |
| 8:40 – 9:00 AM | Double Shell Development with Emphasis on Fill Tube Assemblies Nikolaus Christiansen, LANL |

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| 9:00 – 9:20 AM | Overview of Hohlräum Fabrication at General Atomics Lucy Aghaian, GA |
| 9:20 – 9:40 AM | Developments of Gold Boron Thin Liner for LMJ Hohlräum S. Khieu, CEA |
| 9:40 – 10:00 AM | Mantech Livermore Target Fabrication Advances Nour Nijem, Mantech |
| 10:00 – 10:15 AM | Break |
| Session 8: Foams | |
| Session Chair: Jarrod Williams, GA | |
| 10:15 – 10:35 AM | Manufacturing and Characterization Techniques for Double Cylinder Experiments at the National Ignition Facility Tom Day, LANL |
| 10:35 – 10:55 AM | Advances in 2 Photon Polymerization for Target Fabrication at General Atomics Alex Haid, GA |
| 10:55 – 11:15 AM | Fabrication of Robust Pure Metal Aerogels From the Plasma Phase Jarrod Williams, GA |
| 11:15 – 11:35 AM | Ultra-Low-Density Metal Aerogels in Emerging Target Designs Tyler Fears, LLNL |
| 11:35 – 11:55 AM | Micro CT applications in ICF target fabrication Lance Ulrich, LLE |
| 12:00 – 1:00 PM | Lunch Break (Provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel |
| Session 9: Inertial Fusion Energy | |
| Session Chair: Cliff Thomas, LLE | |
| 1:00 – 1:20 PM | STARFIRE: Building towards inertial fusion energy with multi-institution collaboration Clement Goyon, LLNL |
| 1:20 – 1:40 PM | Smaller lower-cost laser-fusion power plants utilizing a uniquely capable laser technology Steve Obenschain, LaserFusionX |
| 1:40 – 2:00 PM | Multi-MJ target designs for Inertial Fusion Energy Alison Christopherson, Xcimer |
| 2:00 – 2:20 PM | Wetted Foam Target Production for Inertial Fusion Energy Neil Alexander, GA |
| 2:20 – 2:40 PM | UPLiFT: UK Targetry Strategy for IFE Martin Tolley, STFC Harwell |
| 2:40 – 2:55 PM | Break |
| Session 10: Additive Mfg & New Target Materials | |
| Session Chair: Sergei Kucheyev, LLNL | |
| 2:55 – 3:15 PM | Engineering of Thiol-Michael Resins for Two-Photon Printing Mitchell Anthamatten, LLE |
| 3:15 – 3:35 PM | Boron carbide coatings for inertial confinement fusion ablaters |

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| | Sergei Kucheyev, LLNL |
| 3:35 – 3:55 PM | Two-photon polymerization and coherent anti-Stokes Raman spectroscopy for developing fusion targets Yongfeng Lu, Univ Nebraska |
| 3:55 – 4:15 PM | Fully additively manufactured wetted foam capsule for inertial confinement fusion Widianto Moestopo, LLNL |

Banquet

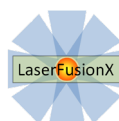
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| 6:00 – 9:00 PM | <p>Banquet Location: Williams D. Evans Sternwheeler</p> <p>6:00 PM: Boarding 6:30 PM: Depart for bay cruise 7:00 PM: Dinner 8:30 PM: Dock 9:00 PM: End of Dinner Party</p> |
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Thursday, August 28th, 2024

Conference Day 4

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| 6:45 – 7:45 AM | <p>Breakfast (provided) Location: Bahia Patio (next to Lobby) at the Bahia Resort Hotel</p> |
| <p>Session 11: Advanced Target Concepts Session Chair: Steve Obenschain, LaserFusionX</p> | |
| 8:00 – 8:20 AM | High-entropy alloys for next-generation Hohlräume D. Goodelman, LLNL |
| 8:20 – 8:40 AM | Observation of Proton-Boron Fusion Reaction from Decaborane Target Irradiated by LFEX Laser Atsushi Sunahara, BlueLaserFusion |
| 8:40 – 9:00 AM | Advancement of Double Shell and PSS Shell Development Hongwei Xu, GA |
| 9:00 – 9:20 AM | Fabrication and Characterization of NIF Lithium Salt Targets Corie Horwood, LLNL |
| 9:20 – 9:40 AM | Fabrication of copper containing deuterated material target for laser plasma diagnostics Kohei Yamanoi, ILE |
| 9:40 – 9:55 AM | Break |
| <p>Session 12: Machine Learning, Future Concepts, Systems</p> | |

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| Session Chair: Gilbert Collins, GA | |
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| 9:55 – 10:15 AM | Overview of Machine Learning Applications in ICF Capsule Metrology Matt Quinn, GA |
| 10:15 – 10:35 AM | Precision milling of ablator materials with ion beams S. J. Shin, LLNL |
| 10:35 – 10:55 AM | Tape Drive Target Delivery System Commissioning on GALADRIEL at General Atomics Gilbert Collins, GA |
| 10:55 -11:15 PM | Innolite 500 Sinewave Project Thomas Uphill, AWE |
| 11:15 – 11:35 PM | Accelerometer-based monitoring of HDC capsule polishing Suhas Bhandarkar, LLNL |
| | End of Conference |

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