

EDUCATION

August 1994 **B.S. Mechanical Engineering**
University of Maryland, College Park, MD

EXPERIENCE

1/2022 –
Present

Dragonfly at John's Hopkins

Applied Physics Lab/Johns Hopkins University

- Support detailed thermal design and modeling of Lander including the fluid thermal analysis, RF components, avionics and integration of instruments.
- Support thermal test, perform thermal model correlation and provide thermal predictions.

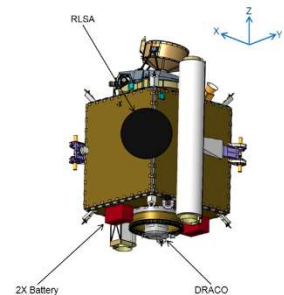


9/2017 - Present

Double Asteroid Redirection Test (DART)

Applied Physics Lab/Johns Hopkins University

- Responsible for the detailed thermal design and modeling of Spacecraft including representation of the embedded heat pipes on the panel for the high power PPU box, the NASA Evolutionary Xenon Thruster-Commercial (NEXT-C) solar electric propulsion system, Roll Out Solar Array (ROSA) and other critical components using Thermal Desktop™ and SINDA/FLUINT
- Support Thermal Vacuum (TVAC) test, perform thermal model correlation and provide flight thermal predictions.
- Support mission operation by trending flight thermal data until the impact.



4/2015 – 9/2017

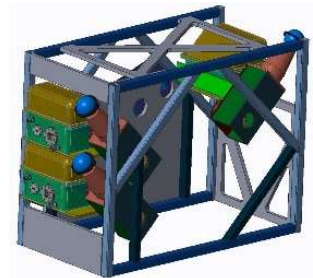
Global Ecosystem Dynamics Investigation (GEDI)

NASA/Goddard Space Flight Center

- Responsible for the detailed thermal modeling of lasers and other components such as star trackers, pointing control mechanisms, board and box level thermal analysis and etc. using Thermal Desktop™ and SINDA/FLUINT
- Perform trade studies for various options to optimize the thermal performance



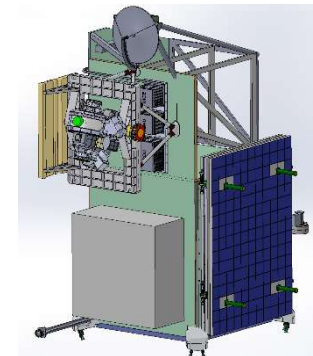
- Responsible for the thermal modeling of the Bench Checkout Equipment (BCE) including various components such as Camera, Integrating Sphere, Beam Splitter, filters and Optics. Thermal designed such that BCE component will meet GSE thermal requirements during GEDI TVAC test. Responsible for all the BCE thermal hardware purchase and installation working closely with thermal technicians
- Work closely with Junior Thermal Engineers – review and direct thermal analysis work assignments



7/2015 – 4/2017 **Pre-Aerosol, Clouds and ocean Ecosystem (PACE)**

NASA/Goddard Space Flight Center

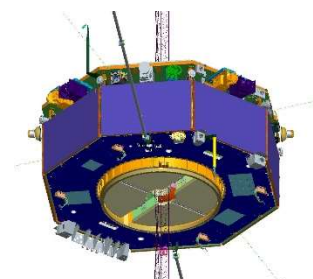
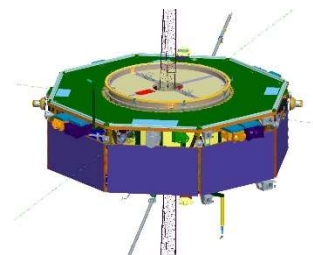
- Thermal design and analysis of PACE spacecraft using Thermal Desktop™ and SINDA/FLUINT
- Thermal design and analysis of PACE Polarimeter instrument using Thermal Desktop™ and SINDA/FLUINT.
- Involved in early (pre-phase) thermal design to shape up the Spacecraft design.
- Perform trade studies to optimize the thermal performance, cost, and risk assessment



3/2012 – 9/2015 **Magnetospheric Multi-Scale (MMS) Mission I&T**

NASA/Goddard Space Flight Center

- Responsible for the receiving, reviewing and integration instrument and component thermal models to the observatory Thermal Desktop™ model
- Support Observatory Thermal Balance (TB) and Thermal Vacuum (TV) testing
- Perform Thermal Desktop™ SINDA/FLUINT thermal analysis for predicting the hot/cold operational and survival temperatures and heat flows
- Perform Thermal Desktop™ SINDA/FLUINT thermal analysis for predicting heater power duty cycles
- Develop test thermal models and predictions to support TV/TB testing and model correlation of the Mag release and deployment mechanisms and AFG/DFG sensors
- Documented Test and Flight thermal model correlation





Jong S. Kim

Chief Thermal Engineer I

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4/2000-2/2012

Orbital Sciences Corporation Engineering Support Services

NASA/Goddard Space Flight Center

- Supported Deformation Ecosystem Structure and Dynamics of Ice (DESDynI) project during early Phase A as a lead thermal analyst. Built the spacecraft level thermal model to optimize the in power and heater requirements for the lasers. Improved the detailed modeling of the laser to provide accurate predictions for the temperature and heater design.
- Supported Hubble Space Telescope (HST) in Flight Systems and Servicing Mission for timeline thermal analyses and transport thermal analyses for Servicing Mission 4 (SM4). Support Mission Operation, Systems Engineering and Software to perform thermal analyses to support optimum operation configuration. Responsible for integrated modeling of overall HST thermal model that includes four axial and radial science instruments; Advanced Camera for Survey (ACS), Cosmic Origins Spectrograph (COS), Near Infrared Camera Multiple Object Spectrometer (NICMOS), Space Telescope Imaging Spectrograph (STIS), Wide Field Camera, and Fine Guidance Sensors (FGSs).

6/1996-4/2000

Unisys Corp

Component Thermal/Hardware Process Engineer

- Performed board-level thermal analysis to support SWIFT.
- Designed Printed Circuit Board (PCB) for various GSFC projects to support their research programs using OrCAD Capture and Layout. Layout design experience includes design of microvias, BGA fanouts, and multilayered boards. Developing the advanced technology concepts and experimenting material behavior on electronic components.
- Supported GOES, POES, and EO-1 satellite programs by performing failure analysis and reliability analysis on Hybrid and COB assembly processes. Developed and implemented advanced packaging technologies for space applications, such as Chip-on-Board (COB), Ball Grid Array (BGA), Column Grid Array (CGA), and diamond substrate for thermal management. Responsible for controlled process of assembling boards and packaging interconnections using wire bonding, solder bumps, and flex connections.
- Performed thermal, vibration, and stress analysis of electronic parts and boards. Familiar with PATRAN, IDEAS, and Pro-Engineer as a pre/post-processor tool and ABAQUS, and PATRAN/PTHERMAL, as a solver tool.

SKILLS

- Use of thermal analysis tools Thermal Desktop, SINDA/FLUINT, TARP, TSS and TRASYS.
- Use of mechanical analysis tools FEMAP, PATRAN/PThermal, Pro/Engineer, CreoView, and AutoCAD