

Emmett Bowers

Thermal Engineer, Spacecraft and Satellite Systems

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SUMMARY

Thermal engineer with six years of experience applying **heat transfer** principles, **thermal analysis**, modeling, simulation, validation, and **engineering documentation** across electronic and mechanical assemblies. Develops practical analysis approaches, evaluates conduction and convection behavior, reviews validation data, and connects model results with observed test performance. Supports design decisions through clear technical summaries, presentations, and collaborative design reviews. Mechanical engineering background supports reliable product development, cooling evaluations, and thoughtful interpretation of technical requirements. Works closely with multidisciplinary engineering stakeholders, translating analysis findings into useful design direction and test preparation. Brings a steady, evidence based approach to **thermal performance**, reliability, and product improvement across complex engineering programs.

EXPERIENCE

Thermal Engineer

Orion Engineering Solutions 📅 June 2022 - Present 📍 Madison, WI

Owns thermal analysis activities for electronic and mechanical assemblies, supporting modeling, validation, testing, design reviews, and technical communication across multidisciplinary engineering programs. Connects engineering methods with practical product decisions, helping teams assess thermal performance, reliability, and design direction.

- Developed **thermal models** for electronic assemblies, clarifying heat transfer behavior during **design reviews**
- Created simulation inputs and reviewed validation data, strengthening confidence in engineering conclusions
- Prepared **technical documentation** and presentations, giving **multidisciplinary teams** clear analysis findings
- Applied mechanical design principles to improve thermal performance considerations across complex product assemblies
- Supported testing activities by correlating engineering models with observed results during **prototype evaluation**
- Evaluated **cooling requirements** and thermal risks, guiding design decisions before formal verification activities

Junior Thermal Engineer

Northstar Engineering Labs 📅 July 2020 - May 2022 📍 Milwaukee, WI

Supported thermal modeling and product development programs through heat transfer analysis, simulation documentation, CAD review, prototype evaluation, and test preparation. Organized technical evidence for engineering decisions while contributing practical recommendations under senior engineering direction.

- Supported thermal modeling projects for **product development** programs, preparing inputs for engineering evaluations
- Analyzed **conduction** and **convection** behavior, informing cooling requirements for developing assemblies
- Documented simulation assumptions and results, making technical recommendations easier for teams to review
- Assisted **CAD** reviews and design improvement activities, connecting geometry choices with **thermal performance**
- Organized technical data for project decisions and **verification**, improving access during review meetings
- Contributed to prototype evaluation and test preparation, linking planned checks with model expectations

PROJECTS

Cooling Requirement Evaluation 📅 2021

Worked with engineering stakeholders to assess conduction, convection, and cooling requirements, supporting a product development decision with organized analysis.

LEADERSHIP & AWARDS

- Received Thermal Analysis Fundamentals Certificate recognition in 2025 after completing focused professional development.
- Recognized by engineering peers for clear technical summaries and useful support during thermal design reviews.

EDUCATION

Bachelor's Degree in Mechanical Engineering

University of Wisconsin Milwaukee 🎓 GPA: 3.5 📅 2020 📍 Milwaukee, WI

Coursework: Heat Transfer, Thermodynamics, Fluid Mechanics, Mechanical Design

CERTIFICATIONS

- Thermal Analysis Fundamentals Certificate 📅 2025
- Mechanical Engineering Degree Certificate 📅 2020

TECHNICAL SKILLS

- **Thermal Analysis:** Thermal modeling, heat transfer, thermal performance
- **Heat Transfer Methods:** Conduction, convection, cooling requirements
- **Engineering Simulation:** Simulation inputs, engineering analysis, model evaluation
- **Validation Activities:** Validation data, model correlation, observed results
- **Technical Documentation:** Analysis summaries, technical documentation, engineering reports
- **Mechanical Engineering:** Mechanical design, assembly evaluation, product development
- **Design Review Tools:** CAD reviews, design reviews, technical presentations
- **Testing Support:** Prototype evaluation, test preparation, verification
- **Electronic Systems:** Electronic assemblies, electronic cooling, product reliability
- **Engineering Communication:** Stakeholder presentations, analysis findings, multidisciplinary collaboration

SKILLS

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|----------------------|-----------------------------|--------------------------|-----------------------------------|
| • Thermal analysis | • Validation approaches | • Thermal performance | • Technical communication |
| • Heat transfer | • Engineering documentation | • Product design | • Design reviews |
| • Engineering models | • Technical requirements | • Mechanical engineering | • Multidisciplinary collaboration |
| • Simulation tools | • Testing support | • Cooling solutions | |

PROFESSIONAL AFFILIATIONS

- Mechanical engineering community participant, sharing practical perspectives on heat transfer and product development work.
- Thermal engineering peer network participant, exchanging analysis approaches and lessons from validation activities.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST