Abigail L. Till
(Abby)

tillal@ornl.gov Oak Ridge, TN 37831-6051

Design experiments for irradiation in the Oak Ridge High Flux Isotope Reactor. Experiment design and management responsibilities include temperature analysis of the experiment, safety basis calculations for experiments ensuring failure conditions cannot be met during the experiment's radiation cycle, producing and maintaining fabrication documentation for experiments to guarantee quality control over the experiment part acquirement/fabrication and the experiment assembly process.

PROFESSIONAL EXPERIENCE

Associate Staff Irradiation Engineer December 2022 - Present
Oak Ridge National Laboratory
- Lead irradiation programs for radioisotope and nuclear materials research efforts including ^{75}Se production, graphite qualification, and FeCrAl cladding
- Aid in technical reviews for safety calculations and drawings
- Train other colleagues on Irradiation Engineering workflow process

Graduate Research Assistant June 2019 - December 2021
Tennessee Technological University
- Conducted microscopy work including grinding, polishing, and analyzing on an E-SEM
- Tensile tested on Instron 5948 and ADMET
- Analyzed test data to produce FEA models to predict load/ displacement curves

Undergraduate Research Assistant January 2019 - May 2019
Tennessee Technological University
- Examined fractography of prematurely failed PCBs under thermal cycling
- Assisted in conducting CTE tests on TMA

Supply Chain Management Intern June 2021 - August 2021
Y-12 National Security Complex
- Developed Voice of Customer survey to gain feedback on current procurement operations
- Gathered and analyzed results for easier understanding
- Brainstormed potential improvements to implement into procurement operations

Product Engineering Intern May 2018 - August 2018
Lochinvar, LLC
- Researched and developed a sound suppressor prototype for residential boiler
- Evaluated statistics from failed and returned units
- Audited a bill of materials for a new product

EDUCATION

Master of Science in Mechanical Engineering May 2022
Tennessee Technological University
Thesis: *Creep Behavior of Eutectic Tin-Lead (63Sn-37Pb) Solder at Low Temperatures*

Bachelor of Mechanical Engineering May 2019
Minor Mathematics
Tennessee Technological University

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SKILLS

Computer languages, applications, and machinery: AutoCAD, Carlson Survey, Autodesk Inventor, SolidWorks, R Statistics, Abaqus (Novice User), ANSYS, MATLAB, Microsoft Office, Instron5948, TMA, DMA, ADMET, E-SEM

ACADEMIC HONORS AND AFFILIATIONS

- American Society of Mechanical Engineer (ASME) Member (2024-Present)
- Professional Certificate in Nuclear Security Fundamentals (2021)
- Graduated Cum Laude (2019)
- Order of the Engineer (2019)
- Pi Tau Sigma Mechanical Engineering Honor Society (2018)
    - Chapter President (2020-2021)
- Kappa Mu Epsilon National Mathematics Honor Society (2017)

PUBLICATIONS

Technical Reports

Till, A. L., Schrell, A. M., Geringer, J. W., Campbell, A. A., *X-energy Irradiation Status Update 2023,* ORNL/LTR2023/3078, 2023.

Russell, N., **Till, A.**, Le Coq, A., Massey, C., Harp, J., *ORNL and GE FOA Irradiation Capsule Pictures*, ORNL/LTR-2024/4, 2024.

Linton, K., Cinbiz., N., Taller, S., Byun, T., Zhong, W., **Till, A.**, Chappell, J., Le Coq, A., Howard, R., et. al, *Natrium Advanced Reactor Demonstration Project: HFIR Materials Irradiation Project Plan*, ORNL/SPR-2024/3408, 2024.

Schrell, A. M., **Till, A. L.**, Chappell, J., Campbell A. A., Geringer, J. W., *X-Energy Low-Temperature Low-Dose Capsule Assembly*, ORNL/TM-2024/3544, 2024.

Schrell, A. M., **Till, A. L.**, Chappell, J., Campbell, A. A., Geringer, J. W., *X-Energy Multiuse Capsule Assembly*, ORNL/TM-2024/3545, 2024.

Till, A. L., Schrell, A. M., Chappell, J., R., Geringer, J. W., Campbell, A. A., *Memorandum on X-Energy Irradiation Update*, 2024.

Conference Proceedings

Howard, R., **Till, A.**, Karriem, Z., *Shielded irradiation facility design for use in the High Flux Isotope Reactor*, 2024 ANS Annual Meeting, Las Vegas, NV, Jun. 16-19, 2024.