SAM WRIGHT BROWN

EXPERIENCE SUMMARY

Extensive experience in lithium manufacturing methods R&D with subsequent deployment in the manufacturing footprint. Conceived and deployed the Direct Material Manufacturing (DMM) approach for lithium material with an annual saving of $8 to $10M thereby delaying major facility restoration by over two decades. Secured over $23M in external work to the Y-12 lithium production facility and returned significant enriched lithium metal inventory to Y-12.

DETAILED EXPERIENCE

Lithium Subject Matter Expert – Longenecker & Associates

2015-Present

Y-12 National Security Complex

Lithium Technical Staff Specialist, Development Organization

1989-Present

- Developed and deployed DMM as production methods for lithium materials
- Developed inventory and material utilization models
- Conceived and demonstrated the Thermal Decomposition/Distillation approach to directly purify retired lithium materials
- Conceived and demonstrated direct recovery of heavy water assets from retired lithium deuteride
- Developed other advanced lithium processes including zone refining methods, direct recycle of machine turning, advance wet chemistry methods, near net shape forming, and enrichment technologies
- Developed inert gas atomization methods for producing lithium materials powder with application to additive manufacturing methods
- Served as the US lithium materials subject matter expert covering interaction with Y-12 and AWE since 2004
- Authored Joint Technology Document with AWE outlining past, present and future joint technology goals/roadmaps
- Hosted more than 30 Joint Working Group exchanges between Y-12, AWE, LANL, and LLNL

Assembly Engineer

1985-1989

- Served as lead Assembly Engineer on 3 separate stockpile systems

Quality Engineer

1981-1985

- Verified design laboratory requirements were achieved for 6 separate stockpile system

Arnold Engineering Development Center

Propulsion Wind Tunnel Project Engineer

1973-1981

- Propulsion wind tunnel and flight test engineer on numerous advance US Air Force systems including the F-15, F-16, F-18, B-1 and cruise missile systems

EDUCATION

University of Tennessee, Knoxville, TN
Master Business Administration, GPA: 3.9

Completed course work for Masters in Mechanical Engineering, University of Tennessee Space Institute, Tullahoma, 1976, GPA: 3.7

University of Tennessee, Knoxville, TN
Bachelor of Aerospace Engineering, 1973, GPA: 3.6

PATENTS

1. 8,679,224, Hydrogen, Lithium, and Lithium Hydride, 2014.
2. 9,193,105, Casting Fine Grained, Fully Dense, Strong Inorganic Materials
3. Patent Pending, Heavy Water Production from Thermal Decomposition and Distillation Off-Gas
4. Patent Pending, Gas Atomization Process for Making Uranium Alloy Powder

RECOGNTITION

- Defense Programs Award of Excellence (DPAE), Site-wide additive manufacturing technology roadmap, 2013
- DPAE, Significant Contribution to Stockpile Stewardship Program, 2013
- DPAE, Lithium Chemistry Improvement Team, 2012
- DPAE, Direct Material Manufacturing, 2012
- DPAE, Direct Material Manufacturing Validation, 2009
- DPAE, Contributions to Special Materials Production and reducing machining time by one-third, 2007
- DPAE, 2006
- DPAE, Direct Recycle Method for Lithium Materials, 2005

PUBLICATIONS

- More than 300 written reports and oral presentation during career

OTHER CERTIFICATIONS

- Served as a Derivative Classified since 1994