Vacuum Engineering & Materials
Vacuum Engineering & Materials

- Global supplier of PVD materials
- Founded in 1987
- Headquartered in the Silicon Valley
- Over 300 customers worldwide
- Extensive manufacturing capability
- Experienced technical support team
- World class customer service
We Offer a Full Range of Products and Services

**Products**
- Sputtering Targets
- Evaporation Materials
- Crucible Liners
- Backing Plates
- Chamber Components

**Services**
- Bonding Services
- Precious Metals Reclaim
- Shield Cleaning
- Hot Press
- Engineering Services
VEM Products

Precious Metals
• Long term partnership with largest precious metals refineries in the world
• VEM manufactures platinum pellets, gold wire and Ultra Pure Gold to reduce spitting events

Compounds
• Develop and manufacture compounds using VEM’s powder metallurgy and hot press capabilities
• Manufacturing capability includes 200 ton, 2,000° C hot press
• Products include WTi, SiCr, NiCrSi, and TiAl

Mainstream Materials
• Offer a full range of materials including Al, AlCu, Ti, Cu, W and Ta
• Supply chain management programs including inventory management and consignment programs
• Robust quality management processes and inspection capabilities
We Have Extensive Manufacturing Capability

- 250 ton, 2000° C Vacuum Hot Press for targets ranging from 50mm – 450mm
- Powder Lab with multiple blending tools including an Eirich Blender for quick homogenous material blends
- Induction Melting Equipment, Process Logic Controlled, to ensure a repeatable process
- Inductively Coupled Plasma (ICP-OES) System for material analysis
- High-purity Indium Bonding capability used to adhere sputtering targets to backing plates
- C-scan Ultrasound to ensure the integrity of targets and backing plates
VEM Services

Target Bonding Services

- High Purity Indium Bonding
- >2,000 bonds per year

Shield Cleaning

- Cleaning of sputtering and evaporation shields and vacuum components used in PVD & Etch chambers
- Experienced Operations team

Precious Metals Reclaim

- High return rate
- Short settlement times
Our Quality and Compliance

- ISO9001:2008 Certified
- RoHS Compliance
- Quality Systems: CAPA, SPC, 8D
- Conflict Materials Compliant
We Serve Diverse Markets

- RF Wireless Communication
- Photonics
- LED’s
- MEMs
- Power Devices
- Photovoltaics
- Memory/Logic
- Advanced Packaging
- Emerging Display Technologies
- Data Storage
We’ve Grown
with Our Customers
VEM’s Management Team

Bob Kavanaugh
President
Joined VEM in 1994
20 yrs of PVD materials experience
BA, University of Southern California

Stephanie McConnell
Chief Financial Officer
Joined VEM in 2009
20 yrs of Finance experience
BS Finance, California State University

Barry Henson
Vice President, Operations
Joined VEM in 2007
35 yrs of Operations experience
Previous Operations management roles with Heraeus and Leybold Materials

Melvin Hirata
Vice President, Sales/Marketing & Technology
Joined VEM in 2012
25 yrs of Sales/Marketing & Engineering experience
BSEE, University of Hawaii
Our Vision
• To be the most trusted supplier to our customers

Our Mission
• Deliver world class quality products and services
• Build customer loyalty
• Inspire a winning team
• Achieve strong financial performance
• Be a model for our community and environment