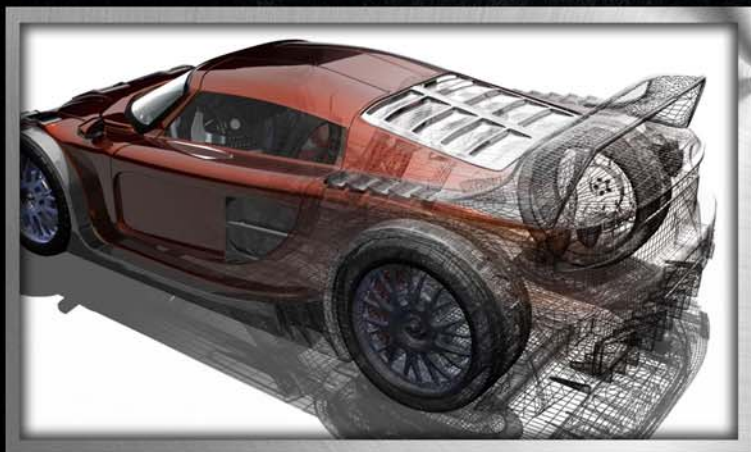


# RESEARCH SERVICES





# CAL NANO ALLOY RESEARCH SERVICES

California Nanotechnologies (CNO) provides research services for its customers. These services include materials research & development and analytical services to assist our customers for their new materials, components and products.

Cal Nano's research services are used by world leaders in Aerospace, Oil & Gas, Energy, Sport & Recreation and many other fields. Companies such as Adidas trust Cal Nano for their new nano materials components worn by Olympic Gold Medalists in track & field.



ADIDAS NANO SPIKES



AEROSPACE & SPACE

## MATERIALS DEVELOPMENT

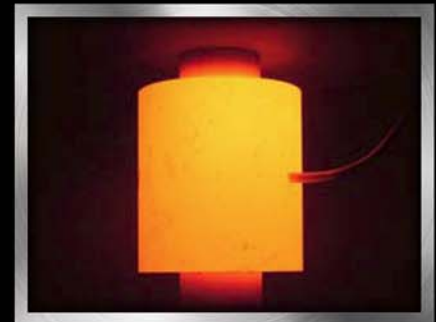
Cal Nano provides world class materials research services. Our services include high-energy cryomilling, milling, cladding, compositing and blending. This includes developing ultrafine to nano-grained structures of light alloys, superalloys, carbides, ceramics and polymers. Customer alloys and blends include multiple reinforcing particulates including  $Al_2O_3$ , SiC, TiN and diamondoid. The resulting materials can be vacuum degassed and HIPed or CIPed.



RESEARCH SERVICES



NANO MATERIALS



NANOGRAIN CONSOLIDATION

## CRYOGENIC MILLING

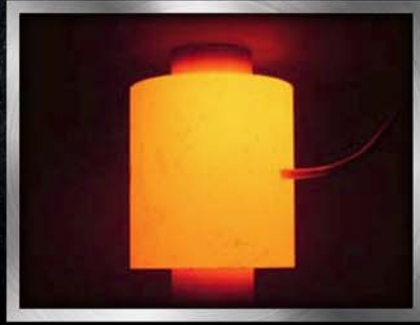
Cryogenic milling has been proven to be one of the best grain refining techniques, allowing for increased strength properties in a multitude of materials. Cal Nano has a state of the art cryomilling facility, which includes systems designed to safely process materials such as aluminum, magnesium, and titanium.





## VACUUM SPARK PLASMA SINTERING

Sintering services are provided for metal, ceramic and composite materials. Applications include carbide tooling, aerospace, oil & gas, bio-medical and others. This includes spark plasma sintering and vacuum sintering.



## SCANNING ELECTRON MICROSCOPY

SEM Services are provided with Cal Nano's Field Emission Scanning Electron Microscope (FESEM). This is equipped with an EDAX Genesis XM 2 Energy Dispersive Spectroscopy (EDS) and an EDAX Orientation Imaging Microscope (OIM) XM 4 Electron Back Scatter Diffraction (EBSD).



## MECHANICAL & WEAR TESTING

Mechanical and wear testing services are offered. Cal Nano has a complete mechanical testing laboratory including hardness and tensile test equipment. Friction and wear testing (wet, dry) services are also provided.



MECHANICAL TESTING



FRICTION AND WEAR TESTING

**California Nanotechnologies, Inc.**

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