NANOCOPPER & NANOGOLD NANOPARTICLES

AMBCo LABS

ambco.cl

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Nanotechnology is the most promising technology that can be applied in almost all spheres of life, ranging from electronics, pharmaceutical, defense, transportation and heat transfer, sports and aesthetics. The applications of nanotechnology are totally dependent on the types of the nanoparticles.

Many types of nanoparticles are being used for different applications, such as metallic, non metallic and magnetic; oxides; carbon nanoparticles and nanotubes. Metallic nanoparticles are of great interest due to their excellent physical and chemical properties, such as high surface to volume ratio and high heat transfer.

Copper and its alloys will be applied in the future as potent catalysts due to their high surface-to-volume ratio and less cost compared to noble metals. Copper is one of the few metals that can turn carbon dioxide (CO_2) to methane or methanol.

WHAT IS NANO TECHNOLOGY

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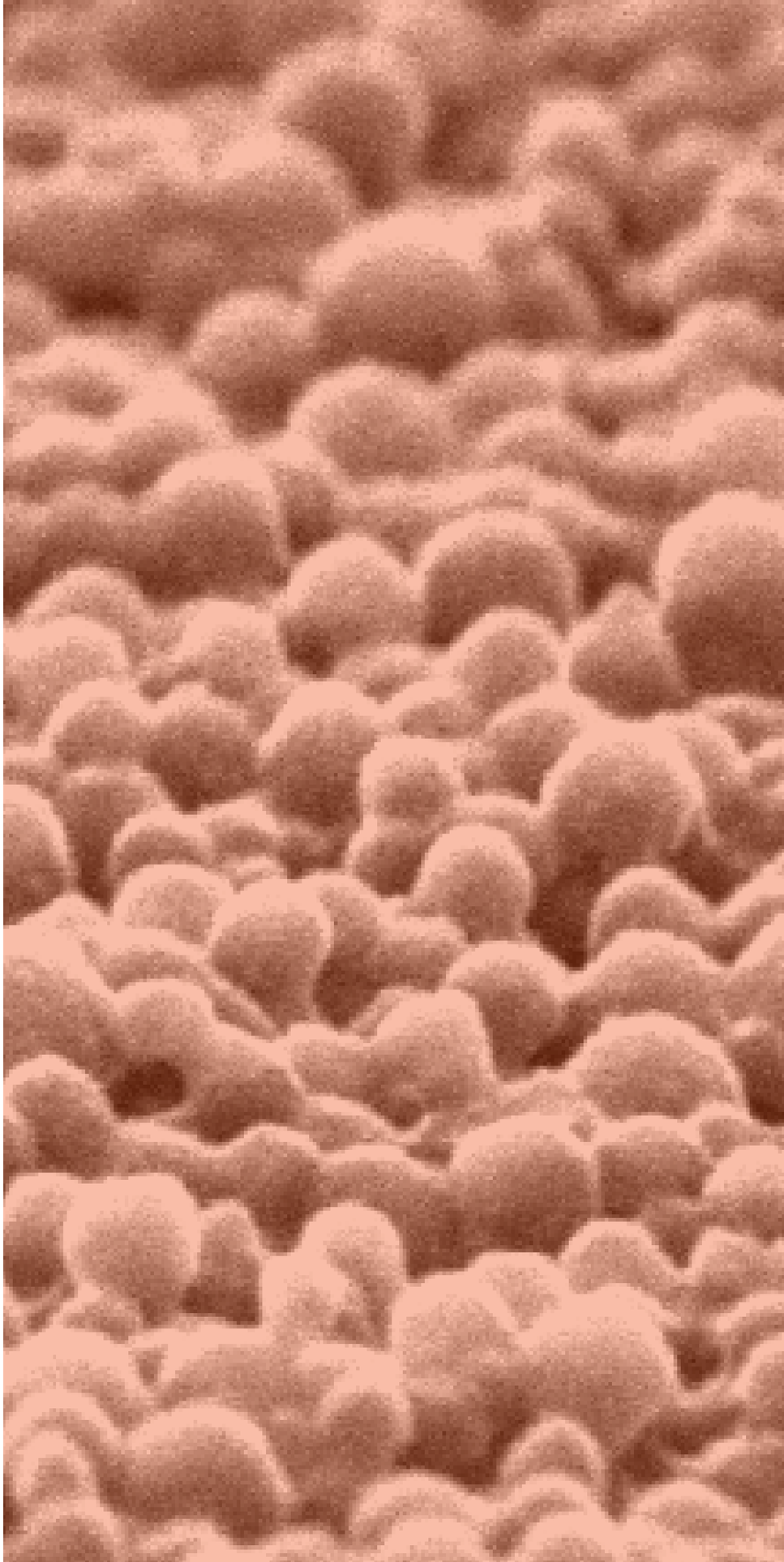

As the 20th century witnessed the revolutions of Quantum Mechanics and Relativity that gave rise to an exponential development of technology, forever changing man's conception of the world, nanotechnology —the art of single atom manipulation and control— holds today the potential to transport man into a new reality all together within the next two to three decades.

AMBCo Labs is part of AMBCo Group established in Valparaíso, Chile, specialized in the manufacturing of first-rate copper and gold nano particles for use in industry and research.

Through years of dedicated R&D, our company engineers and laboratory technicians have mastered a novel technique to manufacture zero valent, stabilized copper nano particles with purities ranging from 99.9% to above 99.999%.

AMBCo prides itself in offering world class nano particles, where copper goes directly from local mines into our laboratory where it is transformed into a world class product certified to international standards.

WHO WE ARE

Research on the potential applications of gold and copper nano particles is a thrilling field being conducted in National Laboratories and Industry round the world. Proper characterization of their dielectric, magnetic, electrical, optical, imaging, catalytic, biomedical and bioscience properties will allow them to be used alone, or combined with other nano materials, to improve the performance of products used in consumer goods, in construction, the aerospace, military, medical, pharmacological, oil, chemical and energy industries.

Nanotechnology holds the promise of one day having from simple anti-aging body cream or anti-microbial paints to nano engineered robots surveying our bodies to prevent the appearance of maladies and repair damaged organs or even cure cancer. Of having nano machines built for water purification and carbon sequestration, therefore curving climate change. Of having quasi infinitely rechargeable batteries and highly efficient fuel cells. We may live in highly energy efficient, lighter yet stronger, self-cleaning and intelligent buildings. We may be wearing intelligent clothes. The applications are literarily unimaginable.

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Research on the potential applications of Copper nano particles is a thrilling field being conducted in National Laboratories and Industry round the world; the goal being to characterize the new quantum domain behavior of these nano particles.

Proper characterization of their dielectric, magnetic, electrical, optical, imaging, catalytic, biomedical and bioscience properties will allow for copper nano particles to be used by themselves, or combined with other materials, to improve the performance of devices and instrumentation used in the aerospace, military and defense, medical, pharmacological oil and energy storage and transmission industries.

Thirty years from now, we will have nano engineered robots surveying our bodies to prevent the appearance of maladies and repair damaged tissues or reconstruct entire organs. Nano machines for water purification, or capable of sequestering CO2 thus curving climate change. There will be nearly infinitely rechargeable batteries, highly efficient fuel cells (green nano technology). We will live in highly energy efficient, lighter yet stronger, self-cleaning and intelligent buildings, etc. The applications are literarily unimaginable, highly dependent on the R&D and the resources available.

The Nanotechnology market has moved circa 120 BUS$ in 2002, 300 in 2005, 500 in 2009 and 800 in 2015 worldwide; the Industrial return looking exceedingly promising.

In the words of Christos Tokamanis, chief of Nanotechnology Research for the European Union, “Nanotechnology becomes a socio political project”. This means the European Union, as is the USA, is heavily committed and investing in the field of nanotechnology.

RESEARCH

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OUR PRODUCTS

AMBCo

Symbol	Cu	
Color	Reddish Metal	
Form	Ultra fine powder	
Valence	Zero	
Shape	Ovoid	
Purity	99.9%	
Stability	Stable	
Average Particle Size	29 ± 12 nm (other sizes available in the range 10-100 nm)	
Size range	20 nm	40 nm
Specific surface area	60 m2/gr	40 m2/gr
Surface energy	5310 J/Mol	3540 J/Mol
Storage	Plastic containers vacuum sealed	
Preservative	Isopropanol	
HS CODE	7406.10	
CAS N°	7440-50-8	
Boiling point	2580 °C	
Melting point	1084 oC	
Molecular weight	63.55	
Density (g/mL,25°C)	8.92	
Solubility	Insoluble	
RTECS N°	GL5325000	
MOQ	0.5 Kg	

3N NANO COPPER

DATA SHEET

AMBCo

Symbol	Cu	
Color	Reddish Metal	
Form	Ultra fine powder	
Valence	Zero	
Shape	Ovoid	
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Average Particle Size	29 ± 12 nm	
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Molecular weight	63.55	
Density (g/mL,25°C)	8.92	
Solubility	Insoluble	
RTECS N°	GL5325000	
MOQ	0.5 Kg	

4N NANO COPPER

DATA SHEET

AMBCo

Symbol	Cu	
Color	Reddish Metal	
Form	Ultra fine powder	
Valence	Zero	
Shape	Ovoid	
Purity	99.999%	
Stability	Stable	
Average Particle Size	29 ± 12 nm	
Size range	20 nm	40 nm
Specific surface area	60 m2/gr	40 m2/gr
Surface energy	5310 J/Mol	3540 J/Mol
Storage	Plastic containers vacuum sealed	
Preservative	Isopropanol	
HS CODE	7406.10	
CAS N°	7440-50-8	
Boiling point	2580 °C	
Melting point	1084 oC	
Molecular weight	63.55	
Density (g/mL,25°C)	8.92	
Solubility	Insoluble	
RTECS N°	GL5325000	
MOQ	0.5 Kg	

5N NANO COPPER

DATA SHEET

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• Metals: High strength metals and alloys. Surface conducive coatings.
• Consumer Goods: Anti-biotic, anti-microbial and anti-fungal for plastics for coatings paints and textiles. Dietary supplements. Active anti-oxidant component in anti-aging creams.
• Electronics and Energy: Electromagnetic shield, heat sinks or highly thermal conductive material. Sintering additive, in electrodes/capacitors and other electronic components in fuel cells and batteries.
• Chemical Industry: Catalyst to improve efficiency of chemical reactions. Also for military purposes.
• Fundamental Research: improve state-of-the-art physics and cosmology experiments −potentially Nobel award winning− requiring low background and high efficiency detection.
• Improved Performance Photovoltaic Cells: Placing a mesh of copper nano particles over a thin silicon layer could raise up to 70% the efficiency of the cell.
• New Energy Storage Technology: Electrodes in the so called super capacitors, able to store 1,000,000 more energy than in conventional capacitors.
• Medical Surgical Instrumentation: Anti-microbial and anti-fungal coatings for application on surgical instrumentation.
• High strength Metals and Alloys: adding copper nano particles to Steel reduces its fatigue diminishing the probability of fracture due to mechanical stress
• Crude-Oil Refinement: Catalyzer in the refinement process.
• Treatment of Residual Waters: In combination with polymeric membranes to kill
bacteria and contribute to the sanitation of residual waters.
• Neuronal Implants, biosensors and drug dispenser implants: Replace the conventional batteries inside human medical implants, therefore saving the need for surgical intervention on the patient to change the battery.
• Pharmaceuticals Production & Plastics Production: Catalyst to improve efficiency of chemical reactions up to circa 90%, e.g. in the large scale production of pharmaceuticals.
• Weapons and Explosives Development: Potential as active or catalyzer components for new weapons and explosives, such as nano thermite. Zero valent ultra-high quality grade (purity >99.999%) copper nano particles have the potential to be employed by the Department of Defense and the Department of Energy in their R&D tests of new products.
• Nanocopper Nanoparticles are in Research and development about cancer treatment.

APPLICATIONS

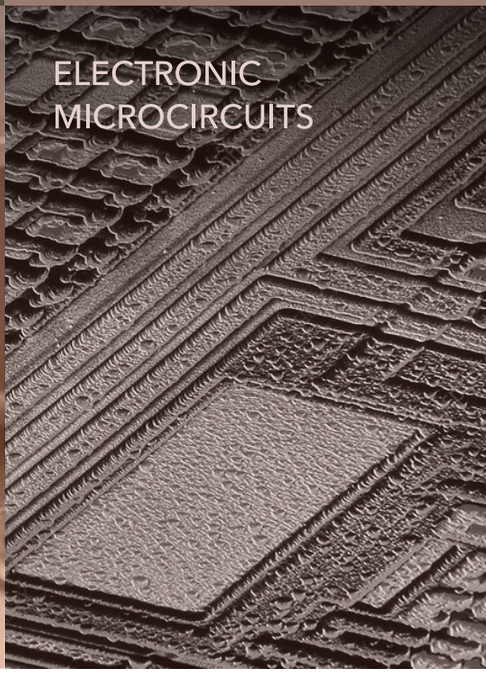
ANTI-MICROBIAL SURFACES


ANTI-FUNGAL FABRICS


DENTAL IMPLANTS


PROTECTION EQUIPMENT


CLEANING PRODUCTS


ELECTRONIC MICROCIRCUITS

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