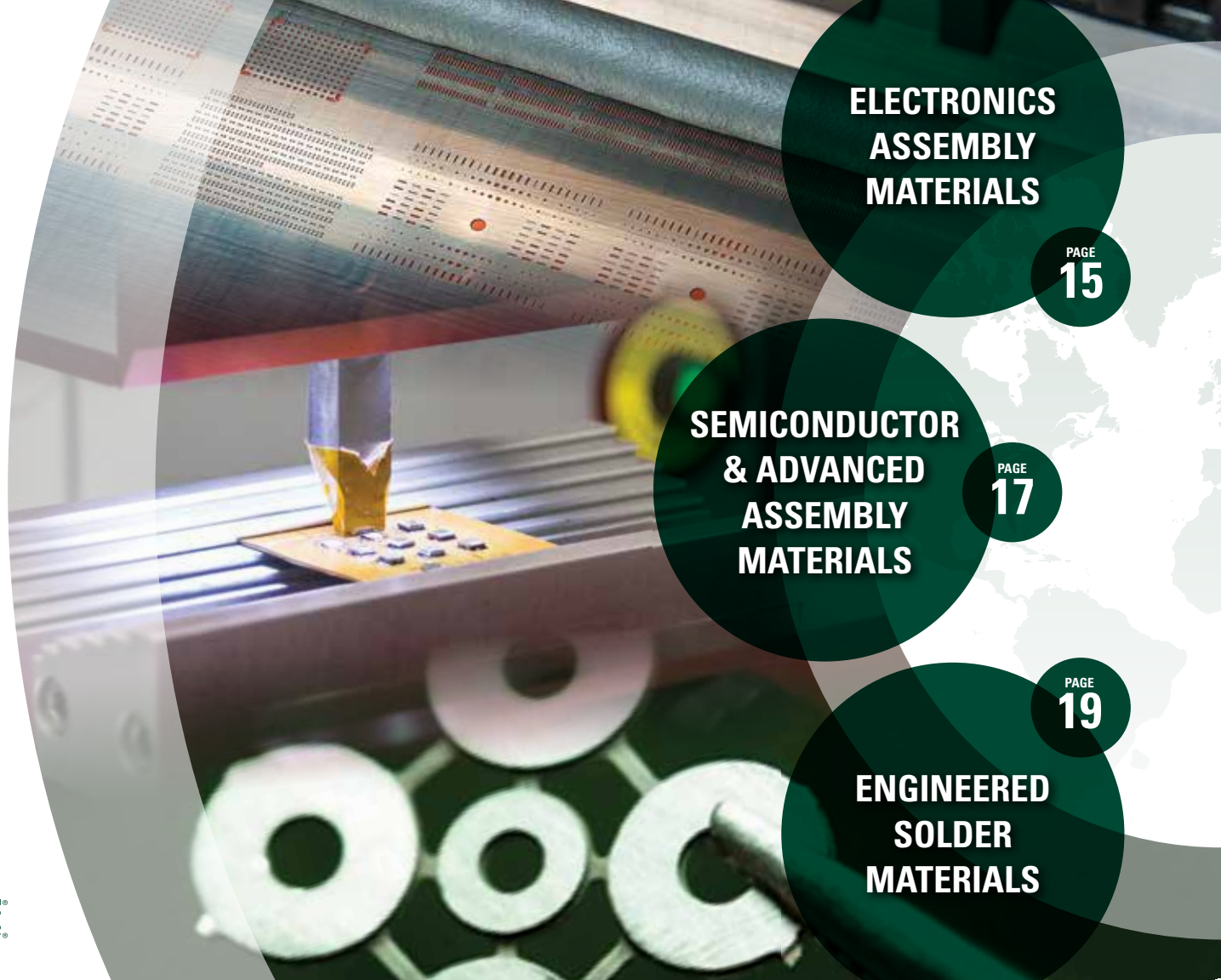
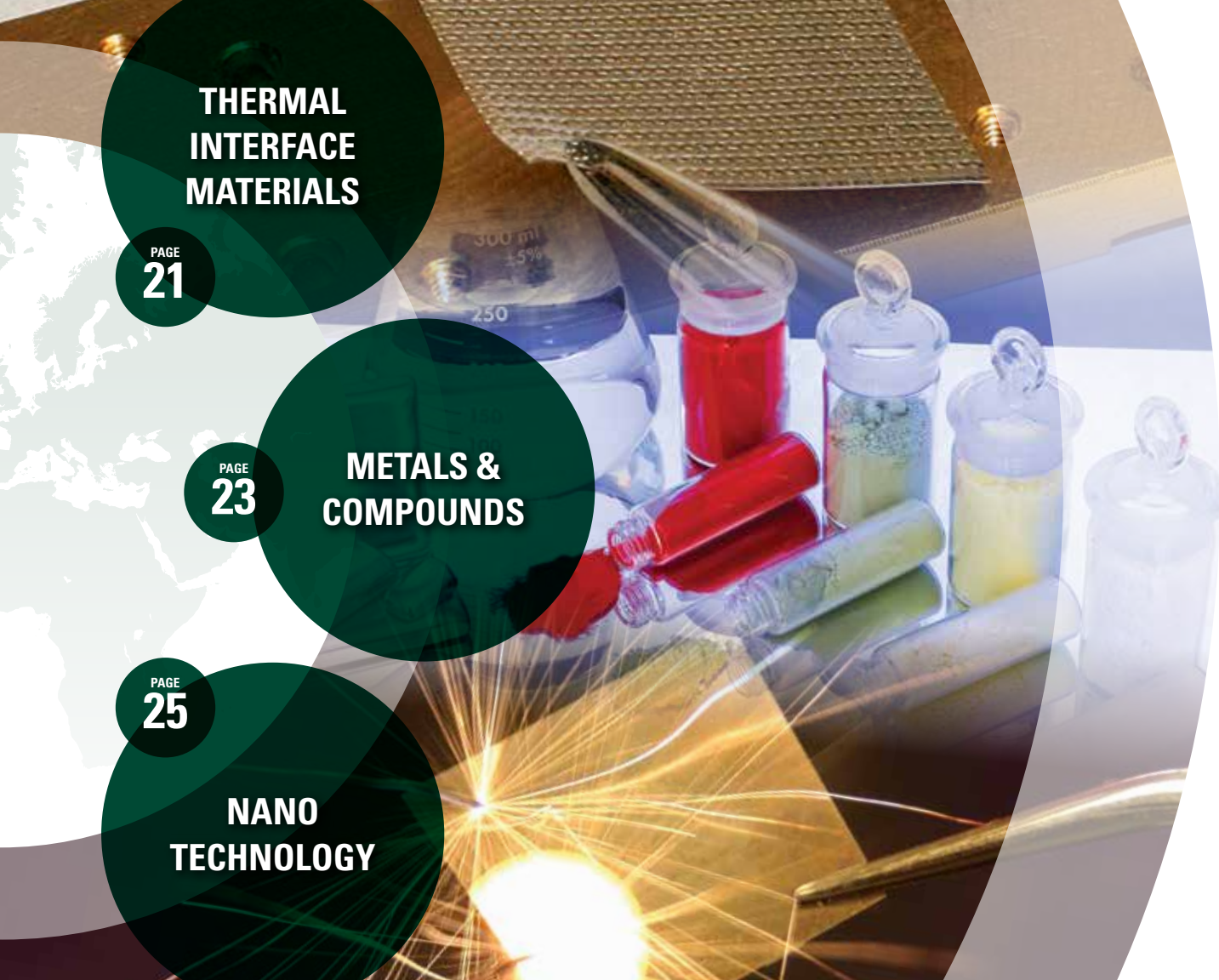
INDIUM®
CORPORATION®

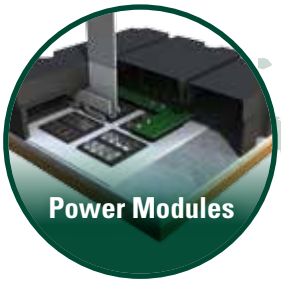
Assembly Materials Designer
and Manufacturer

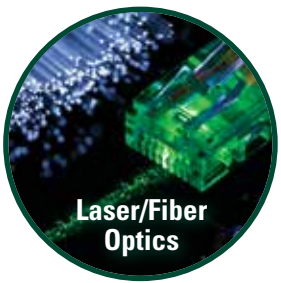


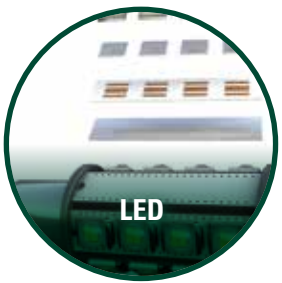
INDIUM CORPORATION®

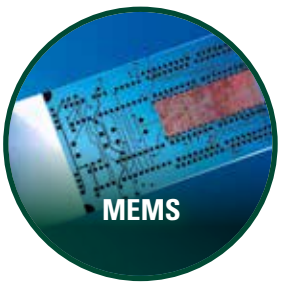


Markets Served









Places Served

SVC Society of Vacuum Coaters

SMTA Surface Mount Technology Association

6σ

iMAPS

IEEE

iNEMI

IPC

semi

Greg Evans
President

The Indium Way

Indium Corporation has succeeded over the decades due to many factors. Some cite our market focus, others our materials expertise, and some say it is our process excellence. Of course all are necessary for success. But the one common denominator underlying these "mechanics" is our culture. And our culture is built on respect, appreciation, and achievement.

It is our Indium culture – The Indium Way – that continually separates us from the competition.

Respect, Appreciation, Achievement.

The Indium Way.

Code of Conduct

Indium Corporation's Code of Conduct is a set of guiding principles that represents a professional commitment to our customers, our peers, our organization, and ourselves. It covers:

- **Ethics**
- **Workforce**
- **Health and safety**
- **Environment**
- **Management systems**

Quality Certifications/Compliance

- ISO 14001:2004
- ISO 9001:2008
- TS 16949
- REACH
- RoHS
- IMDS

Corporate Policies

- International Traffic in Arms Regulations (ITAR)
- California Transparency in Supply Chains Act
- System for Award Management (SAM)
- Metal Supply Chain Policy
- Corporate Quality Policy
- Corporate Safety Policy
- Environmental Policy

Associations

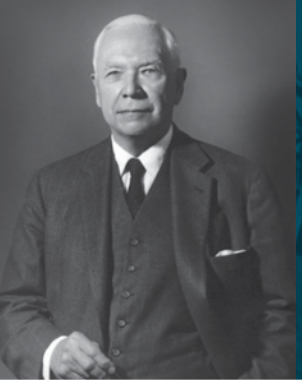
- Six Sigma
- SupplyOn
- IMAPS
- iNEMI
- PSMA
- SMTA
- SEMI
- IEEE
- SVC
- AEC
- IPC

INDIUM CORPORATION®

Indium People Care™

Indium Corporation is active in our local communities through a number of events and organizations.

- **Participating**
- **Volunteering**
- **Sponsoring**
- **Mentoring**
- **STEM outreach**



1926 PATENT

The first indium electroplating processing patent is awarded to William S. Murray and Associates of Oneida Community, Ltd. By 1934, William S. Murray and Daniel Gray had developed an economical indium plating bath.

MARCH 13 1934 FOUNDED

Indium Corporation (originally known as The Indium Corporation of America) is founded at 805 Watson Place, Utica, NY, USA. President William S. Murray, Vice-President J. Robert Dyer, Jr., Technical Director Daniel Gray

1967 WILLIAM N. MACARTNEY III

William N. Macartney III joins the Indium Corporation. He was named President in 1970.

1977 SOLDER PASTES

Indium Corporation begins the development of solder pastes.

1997 SEPTEMBER 1 GREG EVANS

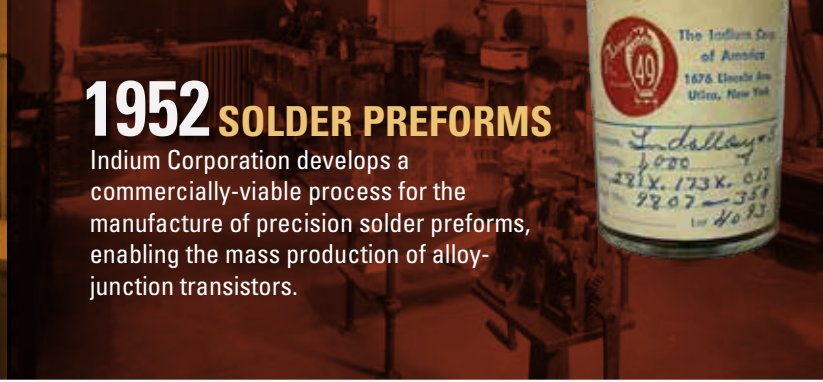
Greg Evans joins the company in 1981 and is named President of Indium Corporation in 1997.

2014 MARCH 13 80 YEARS

Indium Corporation celebrates 80 years of technology innovation and growth.

1938
INDIUM-TREATED BEARINGS

J. Robert Dyer, Jr. develops the process technology and plates the first indium-treated aircraft engine bearing.



1952 SOLDER PREFORMS

Indium Corporation develops a commercially-viable process for the manufacture of precision solder preforms, enabling the mass production of alloy-junction transistors.

SPACE
1989–1990

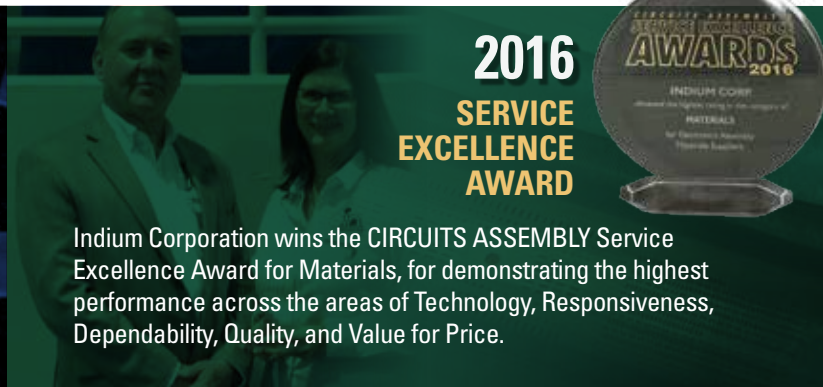
Indium Corporation participates in experiments aboard multiple space shuttle missions.

1992 InTEGRATED® SOLDER PREFORMS

InTEGRATED® Solder Preforms are developed and introduced.

LV1000 2015

Indium Corporation earns CIRCUITS ASSEMBLY's NPI Award for its LV1000 flux coating for solder preforms.



2016
SERVICE EXCELLENCE AWARD

Indium Corporation wins the CIRCUITS ASSEMBLY Service Excellence Award for Materials, for demonstrating the highest performance across the areas of Technology, Responsiveness, Dependability, Quality, and Value for Price.

From One Engineer To Another®

Indium Corporation is a premier manufacturer and supplier of advanced materials for the global electronics, semiconductor, thin-film, and thermal management industries.

We develop, manufacture, and market solders, electronics assembly and packaging materials, pure indium, gallium, germanium, and tin, as well as alloys and inorganic compounds.

Indium Corporation's scientists, application engineers, and technical support engineers work closely with our customers to develop custom solutions to their technical problems and optimize their processes to:

- Increase yields
- Improve customer satisfaction
- Increase revenues
- Reduce defects
- Deliver high value and return on investment

INDIUM CORPORATION®

www.indium.com/people

Our Goal – Your Success

Increase our customers' productivity and profitability through premium design, application, and service of advanced materials.

Our Basis for Success

- Excellent product quality and performance
- Technical and customer service
- Cutting-edge material research and development
- Extensive product range
- Lowest cost of ownership

Indium Corporation operates dedicated research labs in the USA and China.

INNOVATIVE

RESEARCH LABS

Advanced Materials and Process Development Labs: To fully characterize materials and processes in leading-edge technology applications.

Thermal Lab: To analyze the thermal resistance and conductivity properties of thermal interface materials to help determine the optimal applications.

Research and Development Labs: To advance materials science for the creation of new and unique products.

Tech Hubs: To provide for the effective development of electronics assembly expertise and customer service.

INDIUM CORPORATION®

ADVANCED

ELECTRONICS ASSEMBLY MATERIALS

Electronics assembly is one of the fastest changing, most demanding markets on the planet. Globally recognized as a leader in R&D, product performance, technical service, and process optimization, we are partners with most of the world's leading electronics manufacturers.

- Consumer electronics
- Mobile communications
- Communications infrastructure
- Medical
- Aerospace
- Automotive
- Military
- Transportation
- Computing
- Gaming
- And more

Indium Corporation supplies:

- Solder pastes
- Solder preforms
- Metal thermal interface materials (mTIMs)
- Wave solder fluxes
- PoP fluxes and pastes
- Flux-cored wires
- Tacky fluxes
- Bar solder
- Underfill polymers
- And more

INDIUM CORPORATION®

www.indium.com/solders

As the electronics industry evolves to increasingly smaller, sophisticated, and more powerful devices, Indium Corporation provides leading-edge materials and technology to solve today's and tomorrow's assembly challenges.

From smartphones to automotive to flat-panel TVs, Indium Corporation develops and manufactures products that improve the performance of these devices.

CUTTING-EDGE

SEMICONDUCTOR & ADVANCED ASSEMBLY MATERIALS

Our materials enable the manufacture of strong, reliable products that can endure the inevitable physical shocks and thermal stresses associated with electronics devices in applications from the IoT mobile devices — to next-generation, low-energy servers — to automobile electronics. We supply:

Solder Pastes:

- Wafer- and substrate-bumping solder pastes
- System-in-package solder pastes
- Dispensable solder pastes for MEMS
- High-temperature die-attach solder pastes, including Pb-free

Fluxes:

- Wafer-bumping (bump fusion)
- Standard flip-chip and copper-pillar flip-chip
- WLCSP fluxes for ball mounting on wafers
- Ball-attach fluxes

Wire:

- Gold-tin wire

Solder Spheres:

- 150µm to 760µm diameter
- Wide variety of alloys and tolerances
- Tape & reel packaging

www.indium.com/SAAM

INDIUM CORPORATION®

PRECISION

ENGINEERED SOLDER MATERIALS

Selecting the right solder alloy, form, and dimensions is key to producing a quality end product. Our Manufacturing Engineers have developed equipment and processes to meet the market demands for smaller parts, alternative materials, optimized packaging, and prototype to production quantities.

We provide solutions for:

- Bonding, soldering, and brazing
- Thermal management
- Advanced materials requirements
- Mechanical requirements (e.g., CTE mismatch)
- Assembly automation packaging

Our engineers offer:

- A thorough understanding of each customer's needs and applications
- A seasoned problem-solving aptitude
- Knowledge of manufacturing processes and materials handling requirements
- Expertise in metal fabrication, product packaging, and customer satisfaction
- Proven achievements with: Pb-free materials, halogen-free materials, Heat-Spring®, NanoFoil®, patented alloys, flux coatings, indium-containing low-temperature materials, and more.

INDIUM CORPORATION®

www.indium.com/ESM

When engineers face soldering, bonding, or thermal challenges, they turn to Indium Corporation for design and application knowledge and manufacturing expertise.

Thermal management is one of today's key issues – and Indium Corporation is right on top of it.

PREMIER

THERMAL INTERFACE MATERIALS

Solving thermal management issues is so critical to our customers that Indium Corporation operates a thermal lab, where our engineers evaluate our customers' product designs, simulate operational conditions, measure performance, and develop solutions to problems. **Our research has created critical thermal management products, including:**

- Thermally-conductive solder preforms
- Heat-Spring®
- Liquid metal alloys
- InFORMS®
- NanoFoil®

Our thermal interface materials are used in microprocessors, radio-frequency devices, power components, power amplifiers, and light-emitting diodes (LEDs). These high-heat items require high performance thermal interface materials to assure reliable operation.

Our thermal management materials enable electronics devices such as laptops, mobile phones, cell tower antennas, and lighting systems to operate at cooler temperatures, providing increased efficiencies, performance, and longevity.

www.indium.com/TIMs

INDIUM CORPORATION®

LEADING

METALS & COMPOUNDS

Indium Corporation is the world's premier supplier of:

- Commercial-grade and ultra-high-purity indium metal
- A full range of indium compounds
- Germanium metal and compounds
- Gallium metal and compounds
- Tin metal and alloys
- Reclaim services

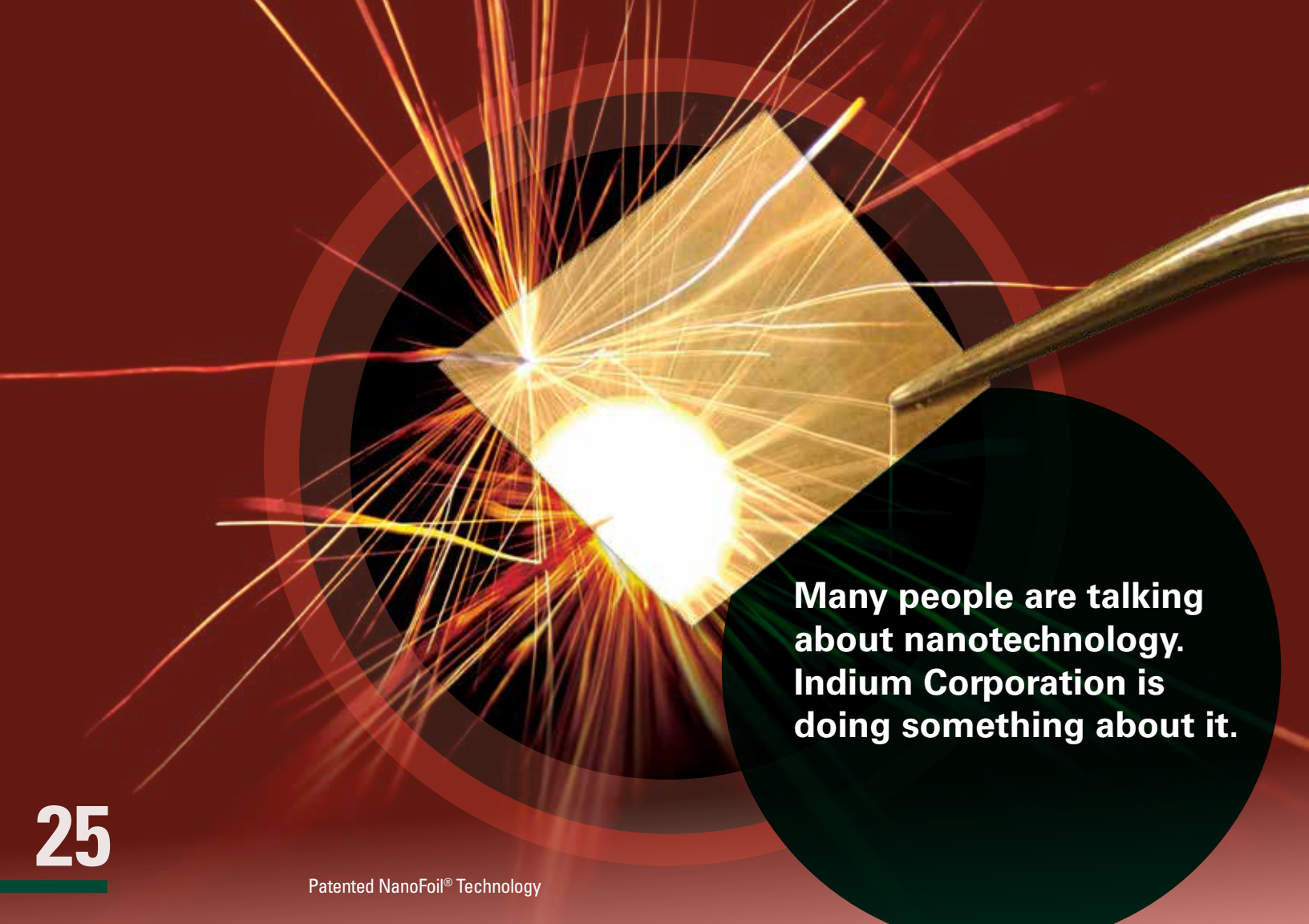
Indium, germanium, gallium, and tin metals and compounds are used to manufacture:

- Transparent, conductive coatings (LCDs, "Low-E," and electrochromic glass)
- Alkaline, high-reliability, and grid storage batteries
- Compound semiconductors (substrate wafers and MOCVD layers for LEDs, lasers, and ultra-high performance transistors)
- Quantum dots
- Solar cells
- Catalysts
- Ceramic glaze colorants and paint pigments
- Hermetic, cryogenic, and vacuum seals
- Low-temperature and fusible alloys
- Nuclear control rods
- Corrosion protection systems
- And more

INDIUM CORPORATION®

www.indium.com/metals
www.indium.com/compounds

From the mine to product packaging, Indium Corporation sets the standard for the processing of indium, germanium, gallium, tin, and their compounds.


Many people are talking about nanotechnology. Indium Corporation is doing something about it.

PROGRESSIVE

NANOTECHNOLOGY

NanoFoil® is metal foil – as thin as a piece of paper – comprised of over 1,000 nano-layers of reactive metal. When NanoFoil is activated, it produces intense heat, only in the area represented by the foil, for approximately 1/1,000 of a second! This precision allows us to accurately control the timing, location, and duration of the heat energy.

NanoFoil® is excellent in situations that involve:

- A mismatch in the coefficient of thermal expansion (CTE) of two materials
- Temperature-sensitive materials
- A requirement for accurate and precise application of heat
- A requirement for ultra-rapid heating
- The inability to use flux
- A requirement for ultra-clean bonding

www.indium.com/nanofoil

INDIUM CORPORATION®

Contact our engineers today: **askus@indium.com**

Learn more: **www.indium.com**

From One Engineer To Another®

Form No. 98053 R9