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Aluminum Alloy 398 and Miniaturized Laser Terminal are 2018 Space Technology Hall of Fame Inductees at 34th Space Symposium

COLORADO SPRINGS, Colo. (Feb. 14, 2018) – The Space Foundation’s 34th Space Symposium will culminate on April 19 with ceremonies celebrating the induction into the Space Technology Hall of Fame® of two innovations developed for space that now improve life on Earth.

2018 Organizational Inductees -- High-Strength, Wear-Resistant Aluminum Alloy (MSFC-398)

The following organizations are being inducted into the Space Technology Hall of Fame®.

- **NASA Marshall Space Flight Center (NASA MSFC)**
- **Evinrude/BRP (Bombardier Recreational Products)**

2018 Individual Inductees

The following individuals are being inducted into the Space Technology Hall of Fame®.

- **Jonathan A. Lee**, Materials Engineer-NASA MSFC
- **Dr. Po-Shou Chen**, Senior Scientist, NASA Contractor-Qualis Corporation

Individual commendation:

- **Sammy A. Nabors, Manager**, Technology Licensing & Commercialization-NASA MSFC

2018 Organizational Inductees -- Miniaturized Laser Terminal for LEO Satellite (MLT-80-LEO)

The following organizations are being inducted into the Space Technology Hall of Fame®.

- **The German Aerospace Center (DLR) Institute of Communications & Navigation Division**
- **Mynaric**

2018 Individual Inductees

The following individuals are being inducted into the Space Technology Hall of Fame®.

- **Dr. Markus Knapek**, Director-Mynaric
- **Joachim Horwath**, Director-Mynaric

The induction will be held on April 19 during the 34th Space Symposium at The Broadmoor in Colorado Springs, Colo., USA. These three events will honor the inductees:

- The Space Technology Hall of Fame® Private Induction Ceremony
- The Space Technology Hall of Fame® Cocktail Reception
- The Space Technology Hall of Fame® Dinner, co-sponsored by SpaceX

The Private Induction Ceremony is by invitation only, and the reception and dinner are open to all Space Symposium attendees. See Symposium details and reserve dinner tickets in advance at <https://www.spacesymposium.org/>.

About High-Strength, Wear Resistant Aluminum Alloy 398

In 1993, the Partnership for Next-Generation Vehicles (PNGV) brought together federal laboratories, universities, automakers and other industry partners, with the common goal of increasing automotive fuel efficiency and reducing environmental impact. Toward this end, NASA Marshall Space Flight Center began work on its High-Strength, Wear-Resistant Aluminum Alloy.

Ford Motor Company recognized that their products could benefit from this new technology. NASA materials-science experts Jonathon Lee and Dr. Po-Shou Chen had significant experience developing high-strength, nickel-based super-alloys for the space program. While these materials would be too heavy for use in an automobile engine, Lee and Chen realized an aluminum alloy would be strong enough for a piston application and would significantly reduce overall engine weight.

Working together, Lee and Chen developed and patented a new aluminum alloy now known as MSFC-398. This new alloy is stronger and durable enough for the piston application while significantly reducing the weight. Months of development and testing with Ford engineers led to a successful piston design using the new alloy. Test results for the new piston design were positive, however Ford chose not to pursue further development.

Federal funding for the PNGV program ended, but the NASA team recognized the commercial possibilities for their new alloy and continued to refine and patent the technology.

Bombardier Recreational Products (BRP) was searching for design and durability improvements for their Evinrude line of marine engines. Working with the NASA team, Evinrude/BRP engineers proved the alloy met their stringent criteria and produced pistons using MSFC-398 and later licensed the technology to use in their Evinrude E-TEC™ outboard engines.

Another early customer, the 'Twin City Fan' company, applied the new alloy in their life-saving tunnel safety fan systems. The MSFC-398 alloy helped ensure the critical systems functioned properly during emergency situations such as high intensity fires.

High-Strength, Wear-Resistant Aluminum Alloy, another space technology generating millions in sales, reducing environmental impact and helping save lives.

About Miniaturized Laser Terminal for LEO Satellite (MLT-80-LEO)

There is an increasing worldwide demand for Internet access to connect all aspects of our modern society. The Miniaturized Laser Terminal for LEO Satellite is a proven commercial technology that can provide that access in a reliable and affordable way. Digital communications technology reaches every aspect of our lives -- from cell phones to the "Internet of Things" and the Big Data movement, upon which so many people rely.

The MLT-80-LEO technology was initially developed at DLR, the German Aerospace Center. DLR's Institute of Communications and Navigation division had been researching optical laser communications technology for over 20 years.

In 2009, a group of DLR employees licensed the technology from DLR to form ViaLight, a privately held company with the goal of commercializing this promising technology. ViaLight founders Dr. Markus Knapek and Joachim Horwath issued a public offering in the German stock market and changed the company name to Mynaric.

Having already sold optical ground stations and air terminals to a range of customers, Mynaric is now in discussions with major U.S. companies that have successfully demonstrated air-to-air communication in the stratosphere, as well as satellite-to-ground communications. California-based Airborne Wireless Network has already begun using Mynaric technology to build out a large aircraft-based communications network. Mynaric's key contribution is the development of a fully commercialized product that can be produced and sold at scale. They have developed a proven data communications technology that is reliable and affordable enough to be used in large scale networks.

There are also significant growth opportunities for Mynaric's optical imaging technology in the rapidly expanding world of data communication. Both Google and Facebook are heavily investing in R&D and are in the planning stages to construct large-scale optical communications networks housed in unmanned aerial vehicles such as steerable balloons or drones in the stratosphere. These systems, designed with large scale commercial applications in mind, are ideally suited to meet growing global communications demand.

Space Technology bringing people around the world closer together.

About the Judges

- **Trevor Beattie**, Founding Partner and Film Producer - BMB Advertising
- **Dr. Robert D. Braun**, Dean - University of Colorado Boulder
- **Simon Goldschmidt**, Chief Commercial Officer - Orbital Systems AB
- **Prof. G. Scott Hubbard**, Adjunct Professor - Stanford University
- **Dr. Thomas M. Koshut**, Associate V.P. of Research & Economic Development - University of Alabama Huntsville

- **Dr. Valerie Neal**, Curator/Chair, Space History Department - Smithsonian National Air & Space Museum
- **VADM Richard H. Truly, USN (Ret.)**, Board of Trustees Vice Chairman - Colorado School of Mines

About the Space Technology Hall of Fame

The Space Technology Hall of Fame® increases public awareness of the benefits of space exploration and encourages further innovation by recognizing individuals, organizations and companies that effectively adapt and market technologies originally developed for space to improve the quality of life for all humanity.

Nominate Technologies for 2018 Space Technology Hall of Fame

The deadline to submit nominations for induction in 2019 will be Aug. 17, 2018. Anyone may submit a nomination of a technology that was developed anywhere in the world for use in space and then modified or adopted for use on Earth. Nomination information is available at www.SpaceTechHallofFame.org.

About the Space Foundation

Founded in 1983, the Space Foundation is the world's premier organization to inspire, educate, connect, and advocate on behalf of the global space community. It is a nonprofit leader in space awareness activities, educational programs, and major industry events, including the annual [Space Symposium](#). Space Foundation headquarters is in Colorado Springs, Colo., USA, and has a public [Discovery Center](#), including El Pomar Space Gallery, Northrop Grumman Science Center featuring Science On a Sphere® and the Lockheed Martin Space Education Center. The Space Foundation has a Washington, D.C., office and field representatives in Houston, Los Angeles and the Florida Space Coast. It publishes [The Space Report: The Authoritative Guide to Global Space Activity](#), and through its Space Certification™ and [Space Technology Hall of Fame®](#) programs, recognizes space-based innovations that have been adapted to improve life on Earth. Visit both of our websites – www.SpaceFoundation.org and DiscoverSpace.org – and follow us on [Facebook](#), [Twitter](#), [Instagram](#), [LinkedIn](#) and [YouTube](#).

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Space Foundation contact:

Carol Hively, Director – Public Relations & Team Communications
media@spacefoundation.org