PM DESIGN EXCELLENCE AWARDS—2020—Special Technologies

From prototypes to mass production, powder metallurgy (PM) technologies like metal injection molding and metal additive manufacturing have been changing the manufacturing landscape across market segments.

Aerospace and defense have utilized PM technology for incredible innovations, the use of PM in the electronic and electrical market impacts our daily lives, and PM in the medical and dental field enhance patient care and quality of life every day.

It is with great pleasure that the Metal Powder Industries Federation announces the winners of the 2020 Powder Metallurgy Design Excellence Awards Competition in the special technologies market segment.

GRAND PRIZES

The Grand Prize in the Aerospace/Military/Firearms Category for MIM components, has been awarded to Advanced Powder Products Inc. for a trigger mechanism housing for a new 9-mm sub-compact pistol produced for O.F. Mossberg & Sons Inc. The component originally comprised two pieces (metal and plastic), and was re-designed as a single MIM part. Over 5,000 rounds were fired to test the part and no failures were observed.

Advanced Powder Products Inc. also received the Grand Prize in the Medical/Dental Category for MIM components, for a guide tube used in dental surgery. This extremely small part has very thin wall sections and a built-in impingement plate on the inner diameter of the tip. This impingement plate has a Gaussian curvature that can only be formed economically by metal injection molding.
AWARDS OF DISTINCTION

In the Aerospace/Military/Firearms Category for MIM components, an Award of Distinction has been given to **Alpha Precision Group – Metal Injection Molding** for a shroud that houses the firing pin and firing pin collar in a bolt-action rifle.

An Award of Distinction in the Aerospace/Military/Firearms Category for MIM components, has also been given to **ARC Group Worldwide** for lever actuators for vanes in a turbo-prop engine. The actuators control the angle of the variable inlet guide vanes and the variable stator vanes.

An Award of Distinction has been given to **3DEO** in the Aerospace/Military/Firearms Category for metal AM components, for an anchor link used in a firearms application. A hybrid metal AM process is used to make the parts.

In the Medical/Dental Category for MIM components, an Award of Distinction has been given to **MPP** and their customer **Coracoid** for a buckle used in an implanted shoulder repair device. Several technologies were considered for making the part but MIM processing was the only one that produced a part that could withstand the stresses induced during the cinching of the device during surgery and the placement of the cleat.

An Award of Distinction has also been given in the Medical/Dental Category for MIM components to **OptiMIM** and their customer **Atricure** for one of two jaws of a surgical device for deploying a clip around a heart’s left-atrial-appendage. The mold produces two parts that are mirror images of one another.

An Award of Distinction has been made to **ARC Group Worldwide** and their customer **Cutsforth Inc.** in the Electronic/Electrical Components Category for MIM components, for a lower beam EZ change holder for removable brush holders. They are used in brush excitation maintenance on turbine generators in the nuclear, gas, coal, wind, and hydro industries.

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**Note:** Recipients of awards in the Consumer Goods segments will be released via video on July 30. As they are released, links to the videos will be posted on the MPIF website: [MPIF Award Winning Parts](https://www.mpif.org/)

**Editor’s Note:** For further details or digital photos contact Dora Schember at MPIF dschember@mpif.org / 609-452-7700.

**About the Metal Powder Industries Federation**

*Metal Powder Industries Federation is the North American trade association formed by the powder metallurgy industry to advance the interests of the metal powder producing and consuming industries and provides a single point of reference for all MPIF member companies.*
2020 MPIF Design Excellence Special Technologies Award Winners

Aerospace/Military/Firearms—MIM
Grand Prize
Trigger Mechanism Housing

Medical/Dental—MIM
Grand Prize
Guide Tubes

Aerospace/Military/Firearms—MIM
Award of Distinction
Shroud

Aerospace/Military/Firearms—MIM
Award of Distinction
Lever Actuators

Aerospace/Military/Firearms—AM
Award of Distinction
Anchor Link

Medical/Dental—MIM
Award of Distinction
Buckle

Medical/Dental—MIM
Award of Distinction
Surgical Jaw

Electronic/Electrical—MIM
Award of Distinction
Lower Beam

digital photos available upon request dschember@mpif.org