

Polymetal

**Best of Both Worlds –
Polymers & Metals**



Guy Varon
VP of Business Development & Sustainability

Company Profile

Head Quarter: Haifa, Israel

Founded: 2013

Employees: 40

Revenue: \$M

Achievement – Horizon 2020 Grant \$2M

Stage: Global Growth



Funded by the Horizon 2020
Framework Programme of the
European Union

Future sites:

- 2024 – Israel
- 2025 – EU

IP:

Filed Patents

Trade secrets of the process





The Challenge

Product Design & Manufacturing Is Becoming More & More Complex

製品のデザインと製造は今後さらに複雑になっていく



Modern Products Require

今後求められる製品の要件



Light weight

軽量



Metal properties (strength, electrical conductivity)

金属の特性 (強度、伝導率)



Sustainability approach (recyclable materials, low energy process)

サステナビリティ (リサイクル可能、低エネルギーな製造プロセス)



Complex 3D structure

複雑な3D構造



Low price

低価格



Durability (mechanical, thermal stability, UV, moisture protection)

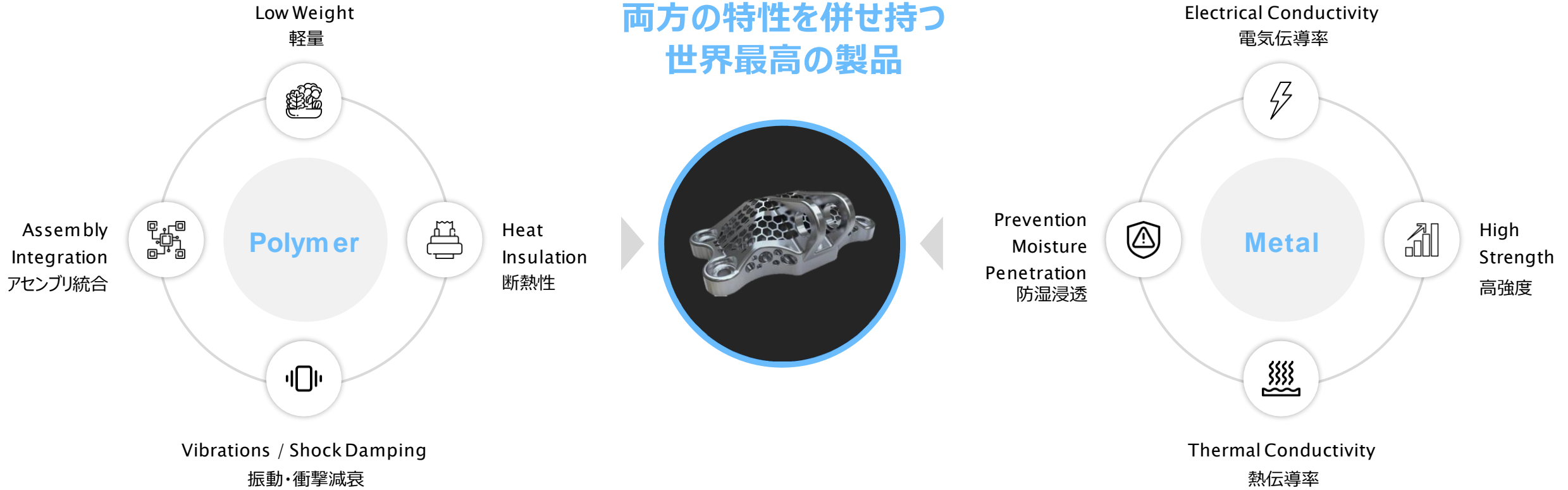
耐久性 (機械的、熱安定性、UV、防湿)

New Products Face **Contradictory** Requirements

新製品は現状の素材では実現できない要件を求められる

Polymertal's Solution

The Best of Both Worlds
Polymers & Metals
両方の特性を併せ持つ
世界最高の製品



Our World Becomes More Demanding - Polymertal's Materials Are The Solution
製品に求められる要件がさらに多くなる - Polymertal社の技術を使い複雑な要求に対応可能

Value Proposition

Weight Reduction

Up to **60%** reduction

重量

最大で **60%** 重量を削減



Time Reduction

Over **50%** reduction

工数

50% 以上の工数削減



Metallic Features

Mechanical, Thermal, Electrical
(Thermal insulation + EMI/RFI
shielding)

金属性質

機械的, 熱, 電気
(熱耐久性 + EMI/RFIの遮断)



Design Freedom

Complex geometries

デザインの自由度

複雑な形状が設計可能



Sustainability

Carbon free bio-based
materials Low energy process

サステナビリティ

バイオベースの
カーボンフリー低エネルギー製造工程

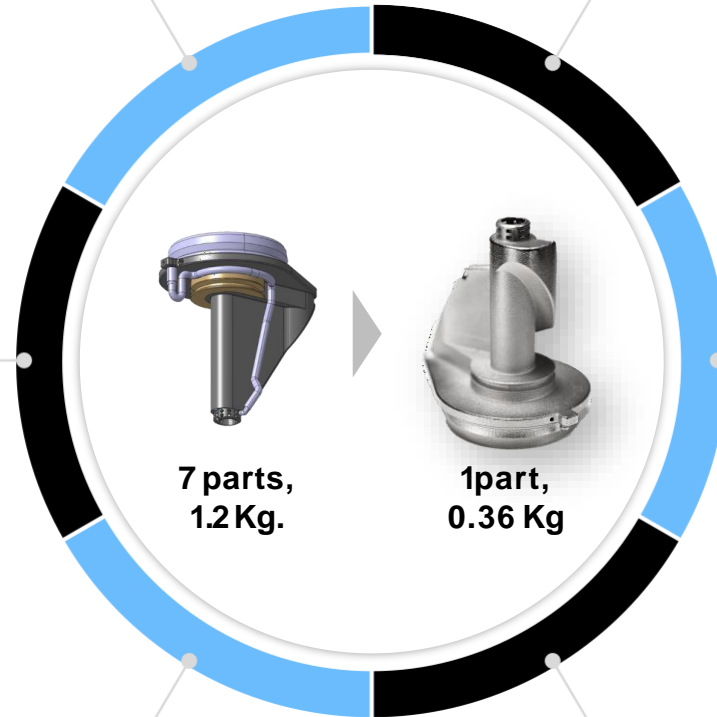


Cost

Up to **70%** reduction

コスト

最大70%のコスト削減



7 parts,
1.2 Kg.

1part,
0.36 Kg

The metal replacement market is a **USD 159.82 billion**. Increasing demand for metal replacing materials from the automotive and aerospace & defense industries.

金属代替製品市場は1598億2000万米ドル

自動車・航空宇宙・防衛産業における金属代替材の需要は拡大している

Polymetal's Technology

Proven Technology In High End Products
ハイエンド製品における実証済みのテクノロジー

No Primers
No Glue

Direct Metallization Plating

Metal layer (nickel, silver, tin, gold)

金属層
(ニッケル、鉄、金)

Metal layer (copper)

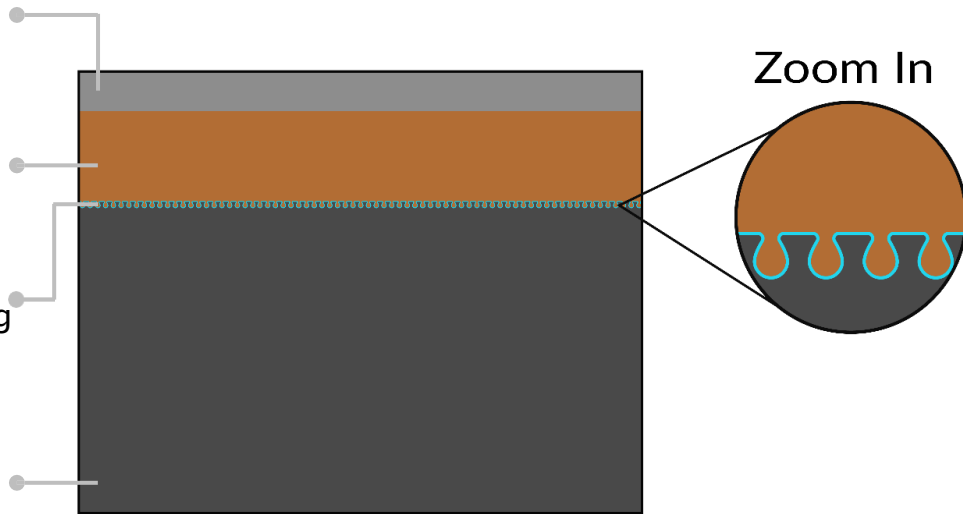
金属層
(銅)

Polymetal's innovation
chemical surface etching

弊社の革新的な
表面化学加工

Substrate (polymer, Composite)

基材(ポリマー、複合体)



Features



Create Nano pores on the surface of the polymeric part

ポリマーの表面にナノポアを形成



Pure Chemical process
純化学法



Excellent Adhesion between the Metal and the Polymer

金属とポリマーにおける優れた接着



100 types of Polymers and several types of Ceramic

100種類のポリマーと数種類のセラミックを使用

Applications

オイルタンク

Oil Tank



Complex Geometry, Low Weight, Sustainable

複雑な形状、軽量化、サステナブル

EMIシールド

EMI Shielding Solutions



Sustainable, Lightweight, Cost Reduction

サステナブル、軽量化、コスト削減

5G & レーダー用導波路

Wave guides for 5G & Radars



Plating internal surfaces, high frequency

内部表面めっき、高周波

航空宇宙 & 衛星アンテナ

Aerospace & Satellite Antennas



Lightweight, Cost Reduction, High Frequency

軽量化、コスト削減、高周波

SCHAEFFLER

Continental
The Future in Motion

ASML

ThalesAlenia
Space
a Thales / Leonardo company



Leadership Team



Ran Carmeli
CEO

- Polymertal CEO from inception
- Former deputy CEO and COO of Aeronautics, a leading global UAV company
- B.Sc. Exact Sciences (TAU)
- MBA (Manchester U.)



Dr. Sabina Ibraimov
Chief Scientist

- Ph.D. in Chemical Engineering, (Technion)
- Manager nanoparticles characterization lab at Technion.
- 15years of polymers surface treatment R&D.



Guy Varon,
VP BD &
Sustainability

- Expertise in forming collaboration globally within Automotive & Aerospace sectors (Motorad, Givon)
- B.Sc. in Industrial Engineering, Technion
- Executive MBA, University of Haifa



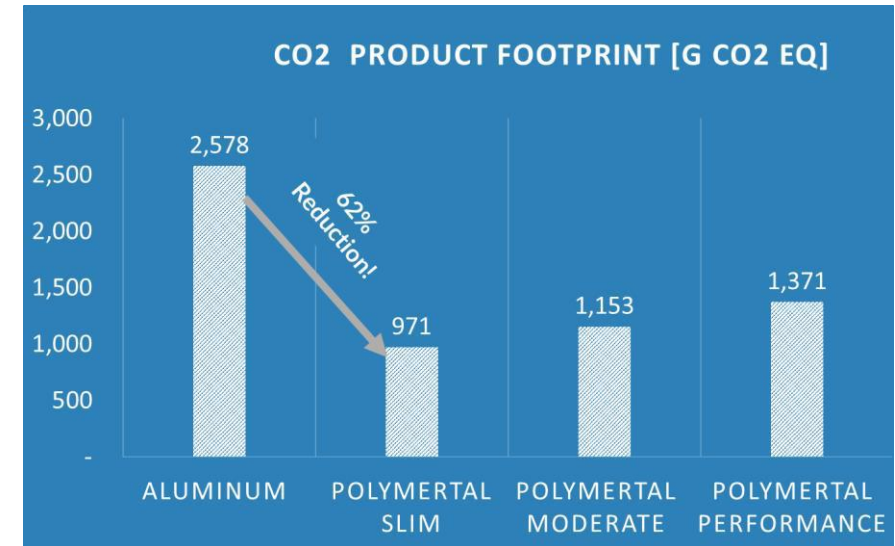
EYAL SCHWARTZBERG
Production Director

- 32 years experience in managing operations in hi-tech and traditional industries.
- Rich experience in advanced methodologies – lean manufacturing and Transferring processes from development to production.

What Do We Offer? -提供価値

- Co-development of sustainable products that bring a huge decarbonization opportunity for metal replacement.

金属代替製品を活用し、大きな脱炭素化の機会をもたらすことが出来る
持続可能な製品の共同開発



What Are We Looking For? -協業したい企業様

- Seeking collaborations with strategic companies that are operating within the field of Polymertal.

Polymertalの分野で事業を展開している戦略的企業とのコラボレーションを模索しています。

- Customers that are interested in lightweight solutions with metallic properties while keeping their price competitiveness.

価格競争力を維持しつつ、金属性の軽量ソリューションに関心を持つお客様と協業させていただきたいです。





Polymertal

Best-in-class supplier of high value, light weight & environmentally friendly hybrid parts

Guy Varon, VP of Business Development

guy.varon@polymertal.com

