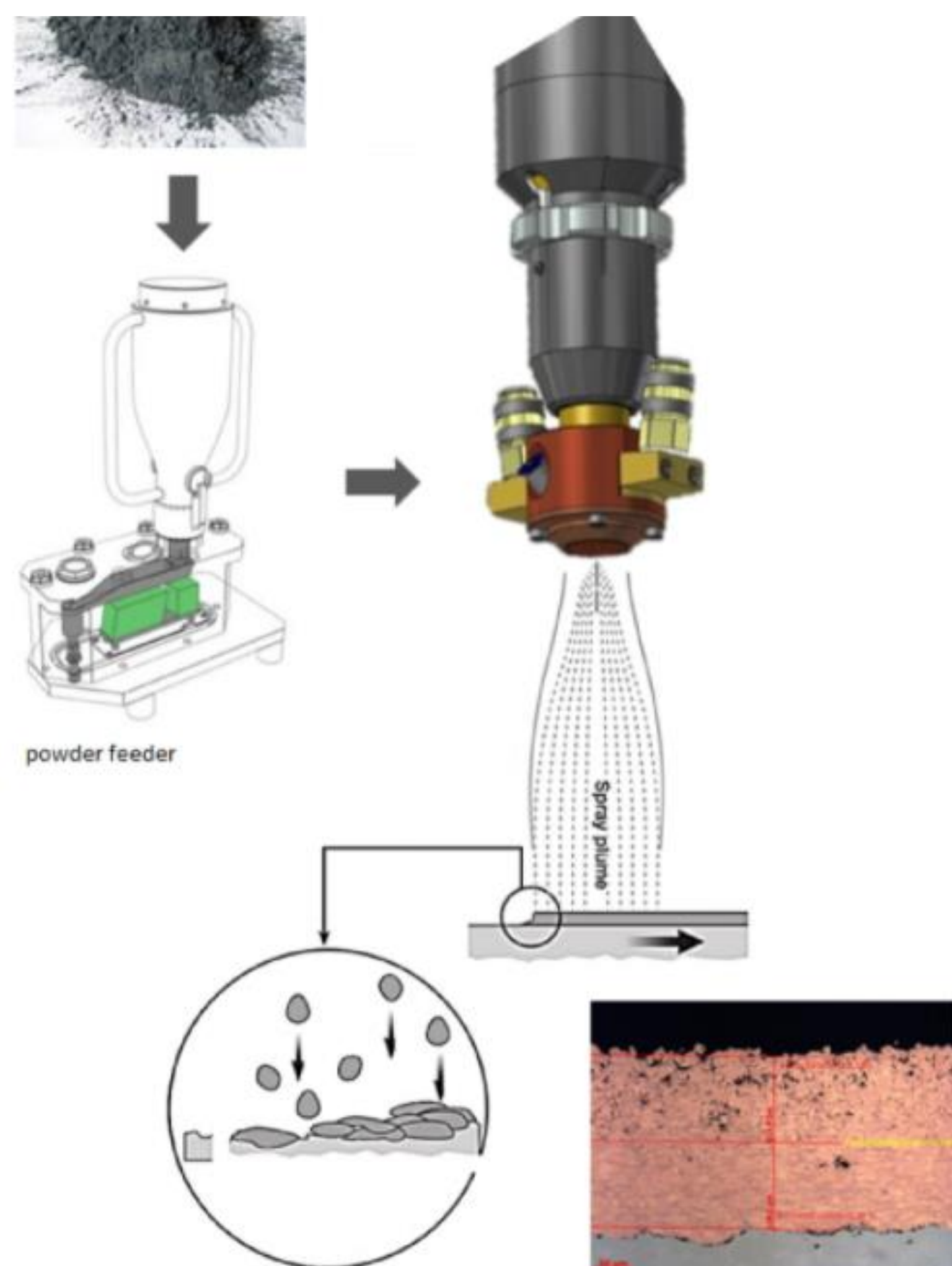


Plasma Powder Deposition (PPD) of metallic and ceramic coatings on large areas

INTRODUCTION

Plasma Powder Deposition is a surface coating technology which allows to deposit metallic and ceramic layers on temperature sensitive substrates using an atmospheric plasma.

A wide range of substrate materials can be used, e.g. light weight metals such as Magnesium or Aluminium as well as various polymers or even paper or wood.



MANUFACTURING

Prior to the deposition process the substrates are cleaned and polymers have to be pre-treated using e.g. a plasma activation process. The metallic or ceramic powders are directly injected into the plasma torch, where they are partially melting and deposited on top of the surface of the substrate. Due to the control of the plasma energy it is possible to realize very thin coatings, starting from 10 μm thickness. By repeating the deposition layers up to several hundreds of micrometer can be created. In certain cases even millimeter thick layers can be created.

FUNCTIONAL COATINGS

The PPD process offers a tool box for the fabrication of functional coatings for a large variety of applications:

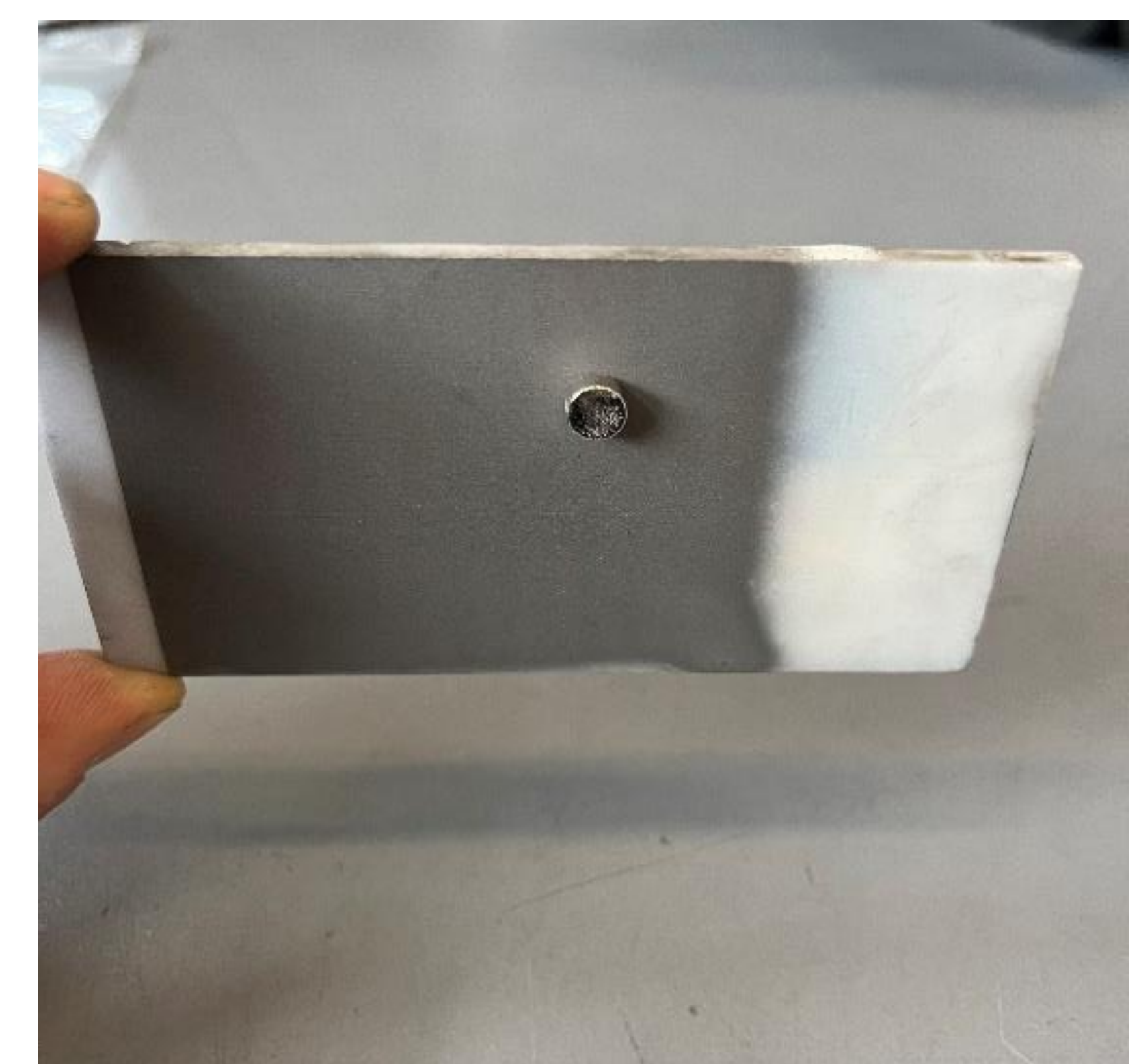
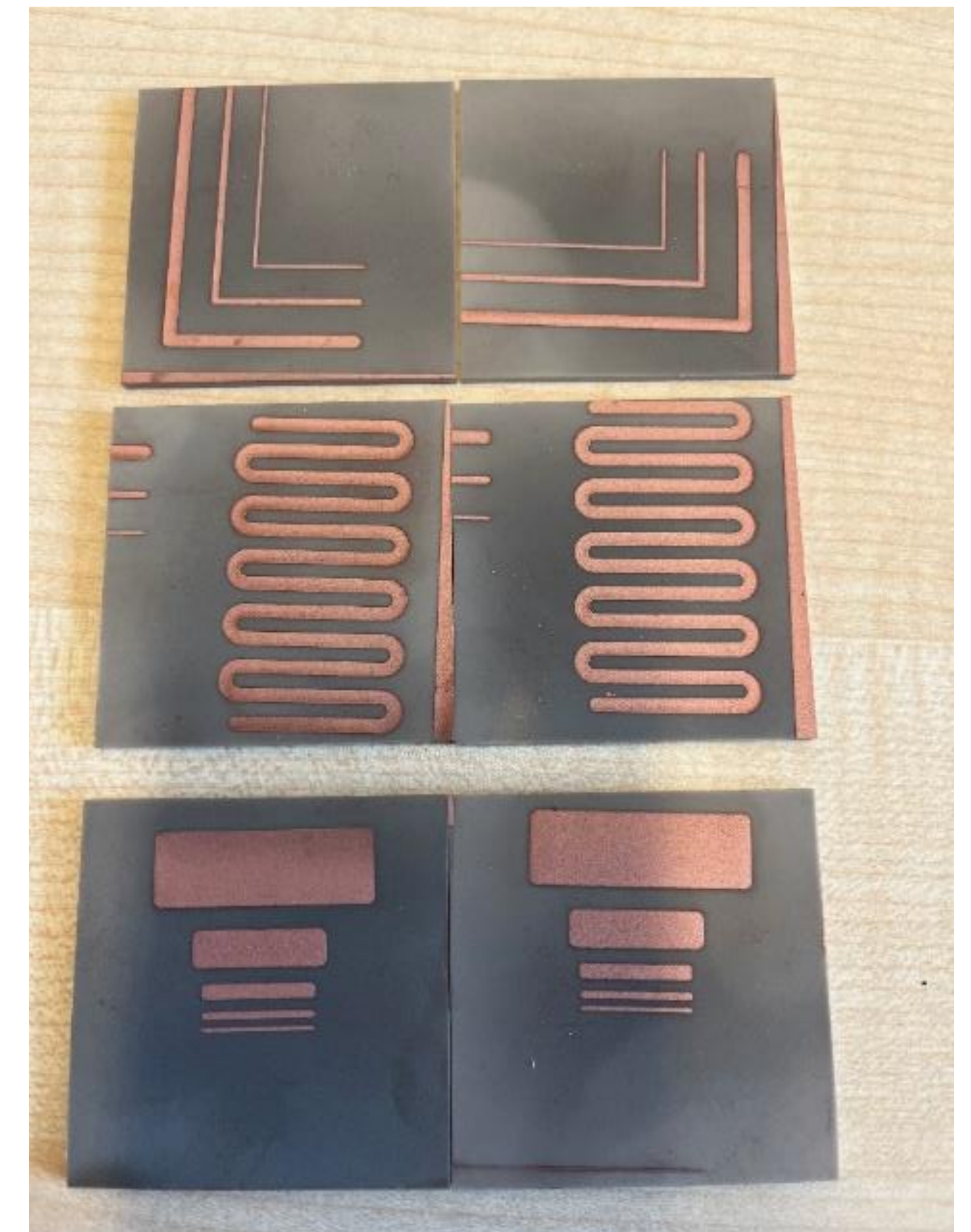
- Wear resistance coatings
- Self lubricating coatings
- Electrical conductive or insulating coatings
- Magnetic coatings
- ..and many more



APPLICATIONS

Metallisation of large carbon reinforced polymer structures allows to apply conductive layers used in antenna structures or for heating of structures. The large variety of substrates allows to metallize polymers such as PEEK with coatings for electromagnetic shielding.

The wide range of materials which can be deposited includes metals with low melting points such as zinc up to refractory metals such as tungsten. The possibility to deposit also ceramic layers allows to create sensors which can be directly sprayed on surfaces, e.g. for monitoring of temperatures, strain or other signals.



BOOTH D04 / HALL 28 - 27

Reference person

Erich Neubauer

Contacts

e.ne@rhp.at

www.rhp.at

RHP TECHNOLOGY



Download BSBF2024 app
for live chat

If you like this poster, download the BSBF2024 app to vote for it and live chat