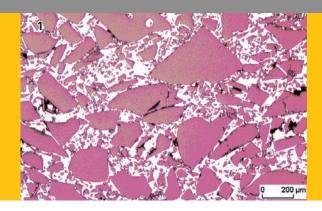
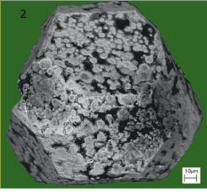


# FRAUNHOFER INSTITUTE FOR MANUFACTURING TECHNOLOGY AND ADVANCED MATERIALS IFAM, BRANCH LAB DRESDEN







- 1 SiC-particle reinforced aluminium matrix composite material (SiC-volume content: 70%)
- 2 Carbide formation for interface design in copper-diamond composites (SEM micrograph of a diamond after the extraction from a CuCr-diamond MMC)
- 3 Carbon fiber reinforced copper matrix composite

# Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM Branch Lab Dresden

Winterbergstrasse 28 01277 Dresden I Germany

### Contact

Dr.-Ing. Thomas Schubert
Phone +49 351 2537 346
Telefax +49 351 2537 399
E-Mail: Thomas.Schubert
@ifam-dd.fraunhofer.de

www.ifam-dd.fraunhofer.de

# METAL-MATRIX-COMPOSITES: TAILORED MATERIALS

Metal-Matrix-Composites (MMC) offer unique combinations of properties. This group of materials becomes interesting for structural and functional applications where conventional materials no longer meet the requirements.

## **Advantages**

- Adjustable and combinable physical properties (e.g. thermal expansion and thermal conductivity)
- Improved wear resistance
- Increased rigidity
- Improved specific mechanical properties

### Powder metallurgical manufacturing

These manufacturing methods have a high application potential due to the technical feasibility of a large variety of combinations of material properties. In addition to a high flexibility in the selection of the matrix alloy and the reinforcements, there are only minor limits set concerning size and geometry of the particles or short fibers.

#### Services

- Material development for concrete component requirements
- Technology development
- Consultation and research concerning the application of MMCs