INCAPTEK
INNOVATIVE TECHNOLOGIES

# COMPOSITE MATERIALS WITH ELONGATED FIBRES

## COMPOSITE MATERIALS WITH ELONGATED FIBRES YIELD EXTREME PERFORMANCE

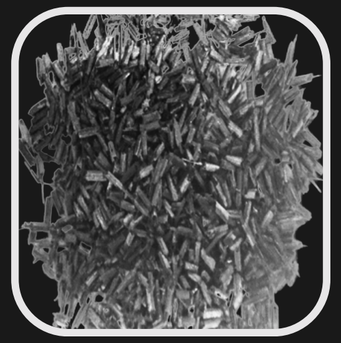
**Composite materials with EXTRAORDINARY PROPERTIES compared to existing materials**

**Extremely strong and durable**
(long and uniformly impregnated fibres yield gain in strength)

**Technological flexibility**
(INCAPTEK's composite technology is compatible with many existing thermoplastics and fibre rovings)

**Sustainable and cost effective production**
(dry fibre impregnation doesn't require toxic solvents)

**Compatible with additive manufacturing and injection moulding**

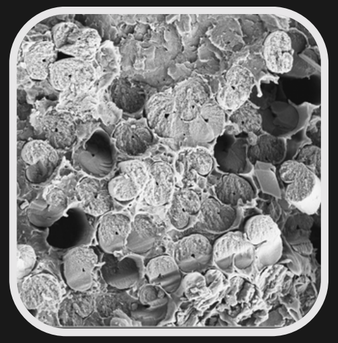


**Fibre-reinforced polymer composite prepregs, pellets, and 3D printing filaments**

**AS HIGH-PERFORMANCE CONSTRUCTION MATERIALS FOR AEROSPACE, AUTOMOTIVE, ETC.**

**AS CUTTING-EDGE MATERIALS FOR MEDTECH**

# WHY OUR COMPOSITE MATERIALS EXCEL



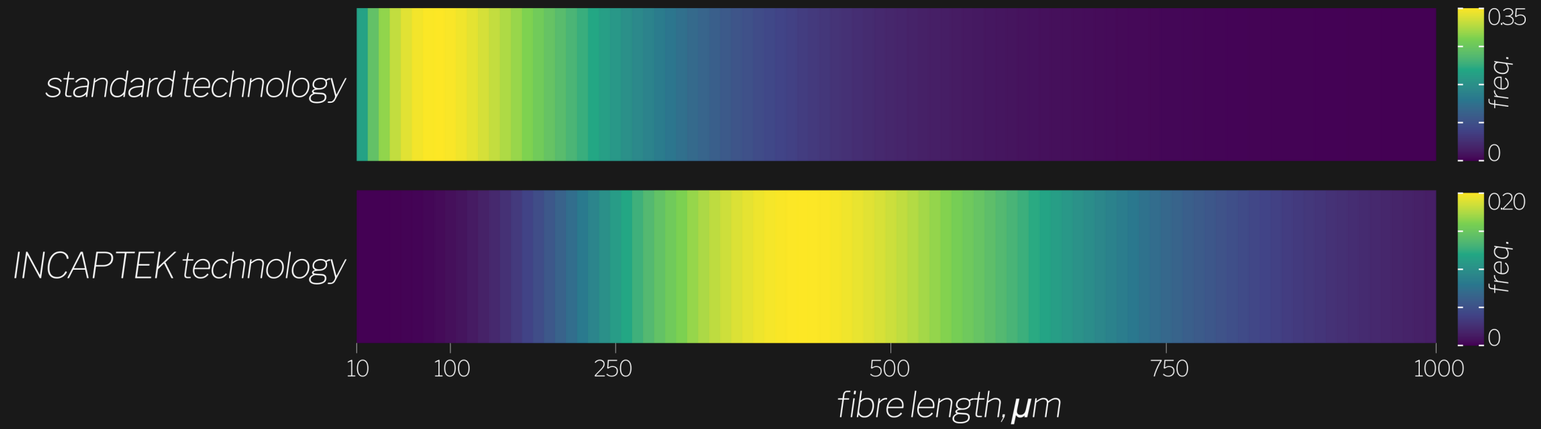
**Uniform impregnation of each fibre with polymer binder**

**Control over the fibre length**

**Long fibres yield gain in strength**

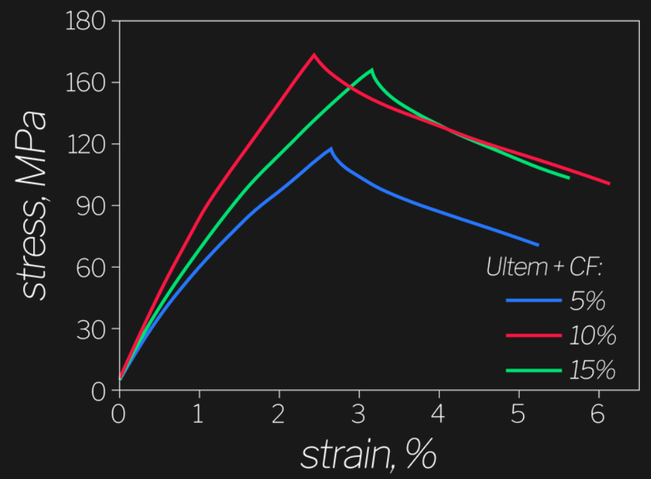
**INCAPTEK's new technology creates materials with long and uniformly coated fibres resulting in higher strength**

Heatmap of distribution of fibre lengths in 3D-printing composite filaments



# INCAPTEK'S TECHNOLOGY YIELDS COMPOSITES WITH SUPERIOR STRENGTH

| | Ultem + 10% carbon fibres | | | | |
|---|---|---|---|---|---|
| | Injection-Moulded | | 3D-printed | | |
| | Standard tech. | INCAPTEK tech. | Standard tech. | INCAPTEK tech. | Commercial |
| Tensile Strength, MPa | 130 | 200 | 100 | 162 | 93 |
| Tensile Modulus, GPa | 8 | 13 | 4.6 | 8.4 | 4.7 |
| Elongation, % | 3 | 3 | 2 | 2.2 | 3.5 |
| Fibre length, µm | 200 | 800 | 200 | 500 | 200 |




**INCAPTEK's new technology results in over 1.5X increase in composite material strength compared to standard technology**

The Stress-Strain curve of 3D-printed Carbon-Fibre (CF) reinforced Ultem produced from INCAPTEK's filament