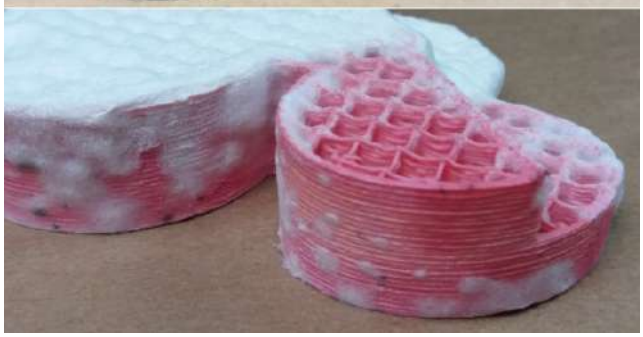
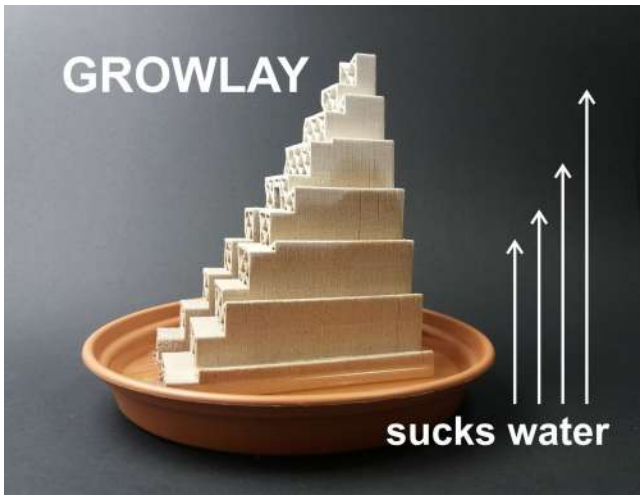
10 years weird 3d printing filaments – LayFilaments by Kai Parthy

GROWLAY is porous and works like a breeding ground for biological cultures / add seeds or spores to them and they will grow / pics: grass / blue and white cheese / mildew / lichen /

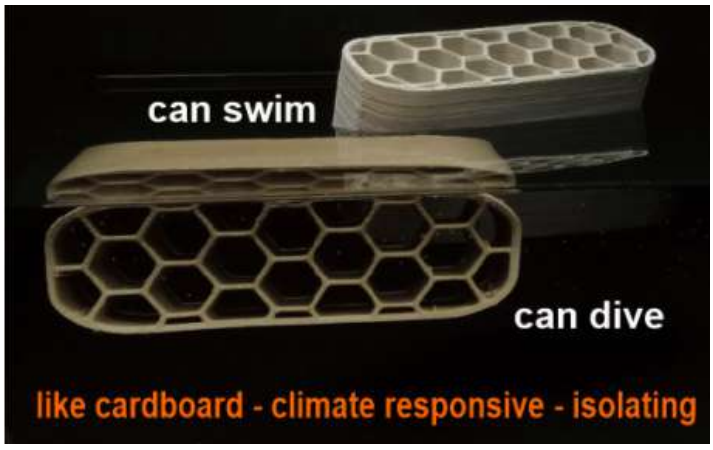
GROWLAY properties: is microcapillary, its cavities suck, absorb and store water or other liquids, mold can grow through the open-cell capillaries and forms a mycelium, compostable

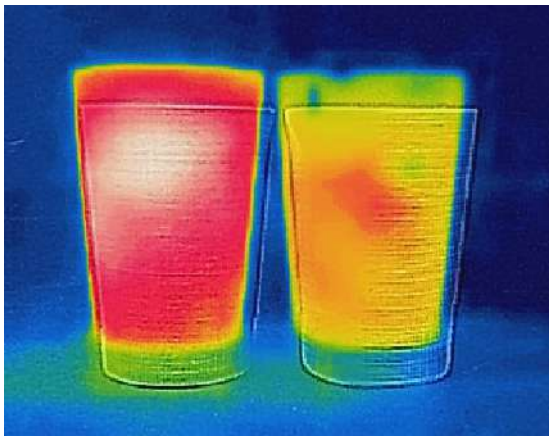




LAYWOODmeta5

a) floats on water, light as Balsa after rinsing in water, can swim, can dive, sucks water fast
b) porous, density: ~0.5 gr/ccm; rough, feels as cardboard
c) climate responsive (elongation) absorptive carrier for agents
d) thermal isolating, low thermal conductivity



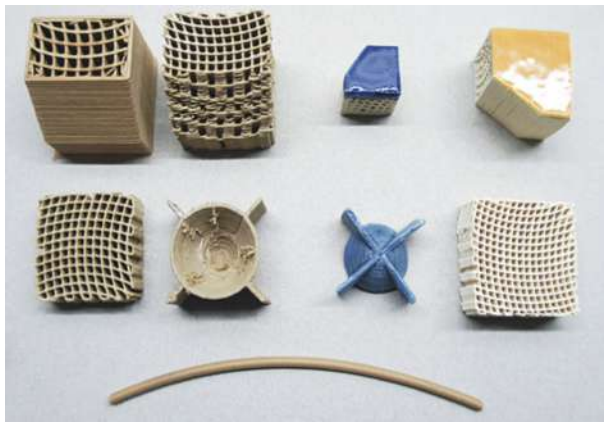


LAYWOOD **The Original** with wood particles / tree-ring effect / worlds first wood filament / lowest warp /

REFLECTOLAY for retro-reflective objects / fashion accessoires / savety gadgets for bikers parts for experimental cars to sew on patches / they will „glow" when lighted up by other light beams at road or highways / the filament is flexible and filled with millions of reflective pigments / this pigments occour as little dots out of the ourface of filament and ofcourse after printing / they send incoming light back to it´s source

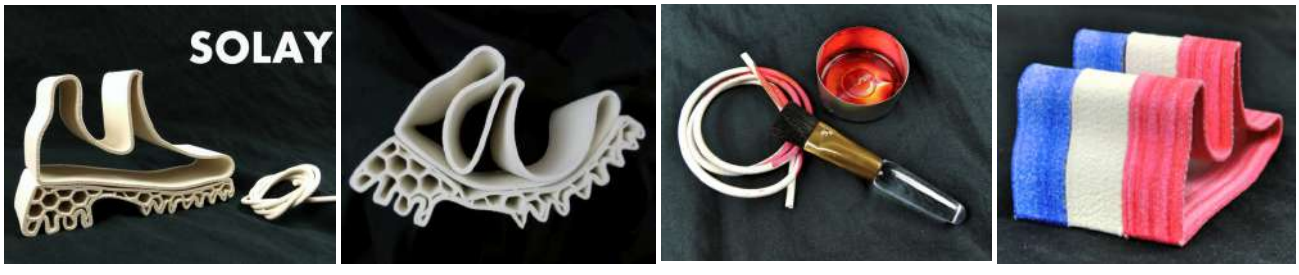
LAYBRICK best dimension stability / lowest warp / first sand stone like, chalk filament / for rough architecture models ideal for jumbo-printers, the objects are ink-able, grind-able, contains natural mineralic fillers (super-fine milled chalk), print temp: 165°C to 190°C to get smooth, higher temperatures (210°C) will print rougher surfaces

LAYCERAMIC print an object / fire it / enamel the ceramic filament at over 1000°C



SOLAY **dedicated for rubber-things, as shoes-soles, allows vintage optic**

elastic as caoutschouc / Shore A90 / high filled with nature born organic pigments (over 30%) / paintable with permanent markers / make your vintage style / blue jeans effect / for experimental shoe-wear /



MOLDLAY **wax-alike / for lost wax casting / for permanent mold casting /** super dimension stabil /near zero warp / at 270 - 300°C it becomes liquid and flows as hot paraffin out of the mold

for lost wax casting

permanent mold casting

LAY-LOSS series

DI-ELECTRO-LAY I

filled with TiO2 72%

DI-ELECTRO-LAY II

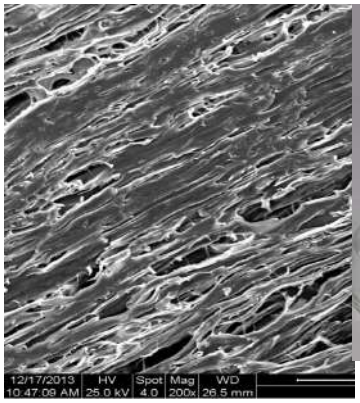
magnetic to magnets,

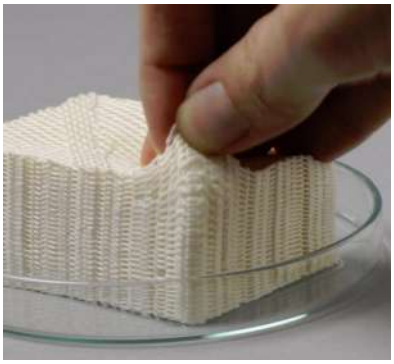
filled with **carbonyl-iron**

BENDLAY **series (tough & flex)** cristal clear / tough / flexible / bendable

POROLAY series / LAYFOMM 40/60 / GELLAY / LAYFELT

patent pending / experimental filament / to print micro porous, felty structures / print foam a likes, floatables, leather-likes, extendables





LAY-AWAY support series (3 diff. filaments)

ETHY-LAY dissolve with alcohol

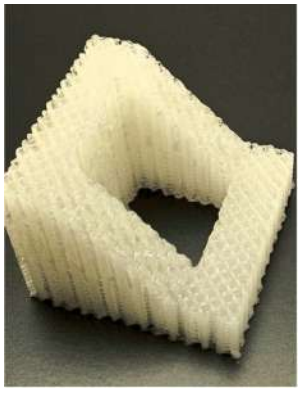
- total clear, cold plattform
- for sensitive bio prints
- print-temp. 165C
- store dry if wet – dry in oven at max. 50°C

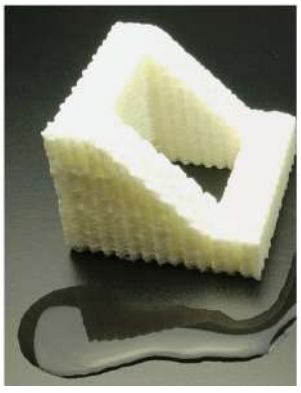
CHAMBERLAY100° dissolve with H_2O

- water-soluble filament to print support-structures
- print-temp: 250 – 270°C
- improved adhesion to ABS, PC build room temp-stability 100°C

CHAMBERLAY130° dissolve with H_2O

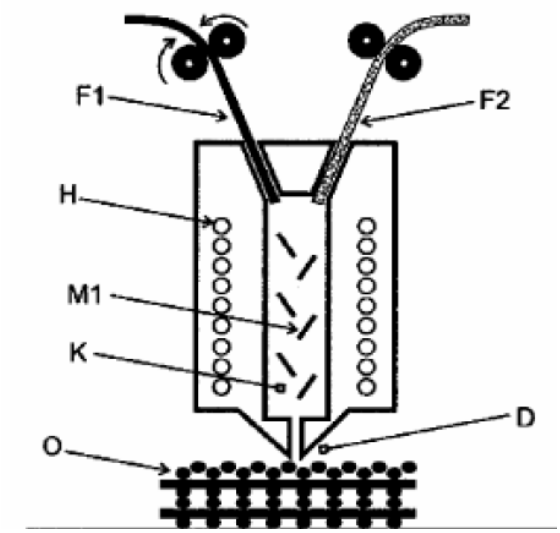
- improved adhesion to PA, print: 250 – 270°C
- build room temp-stability 130°C





selected 3D-printing inventions by Kai Parthy

first dual colour - dual filament hot end



german patent application from 2010
first concept for a hot end to blend filaments

Multi-Filament Printhead

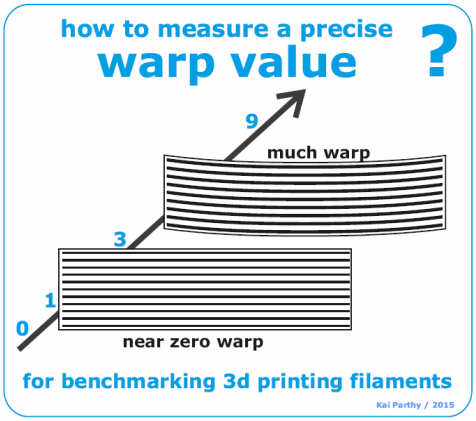
filled: **16.12. 2010**
published: 21.06.2012
DE102010054824A1

M1: static or dynamic mixing elements

[EN] Print head for rapid prototyping printer for extruding thermoplastic or reactive ...

[DE] Druckkopf für FDM-Verfahren mit mehrfacher Drahtzufuhr und Mischkammer zum Erzeugen von Objekten aus Polymerblends

WARP – INDEX for filaments

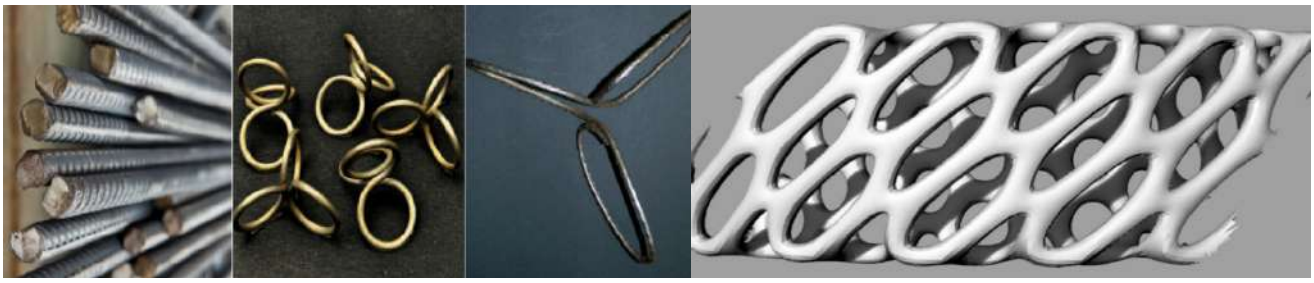


Warp-Index for filaments found.

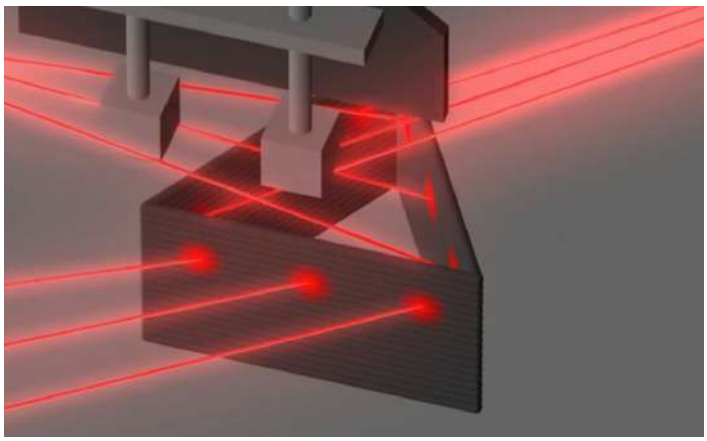
The biggest obstacle for exact printing needs a measurement standard.

The control of the warp is the everlasting problem of the 3D print scene - but at least we now can measure and classify the warp.

BIONIC MESH STEEL FIBRE a new 3d-fibre for controlled and homogene dispensation into concrete ideal to reinforce 3d-printed houses



WARP-fighting CONCEPT / patent pending / animation: https://youtu.be/xgWQPULuI-U



LAY FILAMENTS

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END