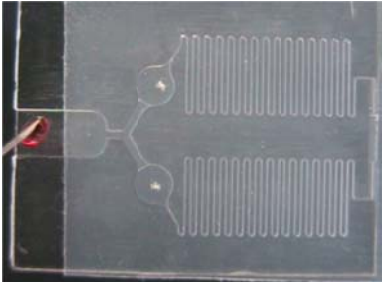

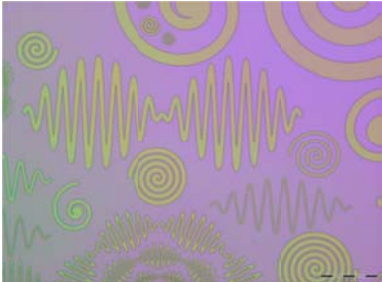



Replication

REPLICATION LAB – Microreplication

Fundación TEKNIKER, Spain



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Material class:	Silicon	Polymer X	Metal X	Ceramic X	Glass	Organic	Other
Short technology description:	Production of short series of microcomponents made out of polymers and metal by <ul style="list-style-type: none">– Hot embossing system Jenoptik HEX03 Substrate: 4" and 6" wafer; Mould: 4" Maximum force 200 KN Maximum temperature 220° Automatic demolding– Microinjection molding Battenfeld Microsystem. For small components in the milligram range Extremely short cycles round 1.5s						
Typical structures and designs:			Microfluidic device replicated by hot embossing in a 1 mm thick PMMA film and sealed with a PSA				
			Dental bracket microinjected in polysulphone. Dimensions 2.5x2.5x3 mm				
			4" level nanoimprinted structures on a thin film thermoplastic polymer for NanoImprint Lithography				
			Drug delivery system. Micromilled steel mold and microinjected device				

Special features:	<ul style="list-style-type: none"> - Alignment moulding accuracy 2µm - Double side hot embossing - Bonding of polymers - Quality control integrated in injection equipment. - Automatic handling of parts
Limitations, constraints:	<ul style="list-style-type: none"> - Total volume of material injected 1,2 cm³ (part + runner) - Maximum embossed area: 4" wafer
Material examples:	<ul style="list-style-type: none"> - Hot embossing of bulk and thin film polymers: PMMA, PC, COC, PLLA, PLGA, Polycaprolactone and commercial NIL thermoplastic polymers - MicroInjection: polymers (PSU, PSE, PEEK) and metal powders (stainless steel and alumina)