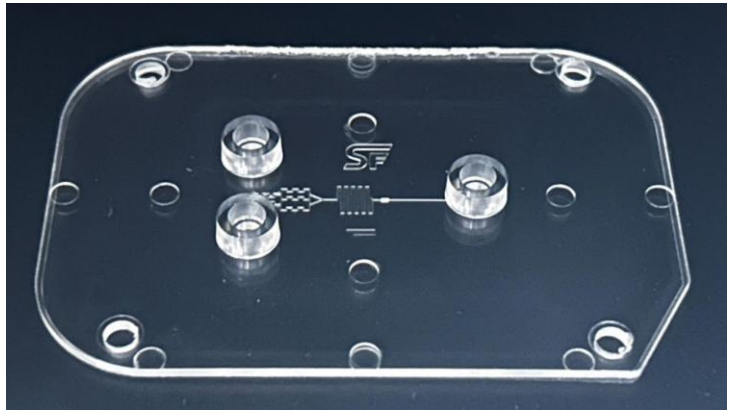
Precision polymer micro-molding

Project Idea	**Injection molding beyond its conventional limits. Features from 20 µm, high aspect ratios and internal channels in engineering polymers, at molding cost and throughput. In production today. Offered as the micro-molding work package for the key product your consortium chooses.**
Organization name, town and country	SmartForge Polymers Ltd, London, United Kingdom
Addressed topic(s)	**HORIZON-CL4-2027-01-MAT-PROD-02** Advanced manufacturing for key products (IA, Made in Europe partnership). *Competence offer: technology partner.*

SmartForge Polymers Ltd

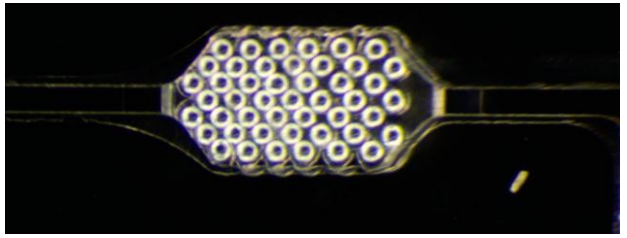
- **UK SME, London.** Precision polymer micro-molding; tooling, molding and metrology in-house.
- **Molds COP, COC and polycarbonate** at features from 20 µm, held to ±1% depth and ±5% width across a 400× feature range, in one shot.
- **In production:** microfluidic and diagnostic consumables shipping to customers, including 30 µm-channel blood separators and multilayer valve chips.
- **First mass-producible hollow microneedle array:** microneedles and lumens molded in one shot. In discussion with top-20 pharma.
- **First Horizon Europe bid.** Experienced, fast grant writers who contribute to the whole proposal.



DM-K392, molded COP chip. 20 µm channels and 8 mm ports in one shot; every measured feature within 5% of drawing.

Beyond conventional injection molding

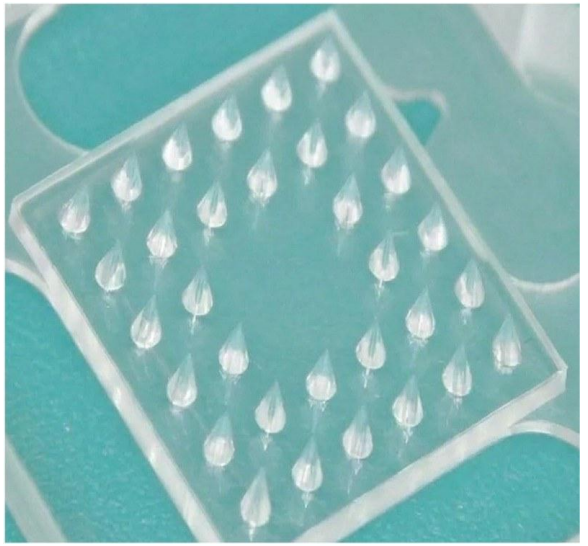
- **The floor.** Standard molding cannot fill or release fine features, high aspect ratios or internal channels. Past it, parts are made slowly and expensively, or not at all.
- **SmartForge molds past it,** at molding cost and throughput. The tool sets the tolerance, so errors don't grow as features shrink.
- **Our work package:** production tooling, multi-cavity replication, process window at rate, inspection spec, sustained-run demo.
- **Any key product with this geometry:** diagnostic consumables, microneedle arrays, structured surfaces, fiber ferrules, microreactor plates, microlens arrays.
- **Why it succeeds:** process in production, geometry proven, tooling in-house.



Pillar filter, molded. 100 µm pillars, 60 µm deep, inline with a 120 µm channel, same shot.

Competences / type of partners sought

- **A coordinator** with a Made in Europe track record who needs a micro-molding technology partner.
- **Tooling and micro-replication RTO:** tools at scale, replication fidelity.
- **In-line metrology:** per-part dimensional and functional inspection at production rate.
- **Machinery builder** for the production cell; digital-twin and process-simulation partner.
- **End user** for the key product: pharma, diagnostics, photonics or chemicals.
- **Any EU or associated country;** widening-country partners welcome. We move fast: a full work-package text within days.



Hollow microneedle array, molded COP, microneedles and lumens in one shot.

Contact details

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