

The Technology

The **PERAMEDIC** project is developing the **PERaME** stand-alone drug formulation system for personalised medicine, offering locally prepared, individually customised, segmented release polypills, with an inherently digital technology drive. The system integrates several novel technologies: personal release profiles, in situ 3D printing of release matrix using adaptive toolpaths, and ultra-precise multichannel dosing of drugs into sealed microcompartments.

The **PERaME** system will be a tabletop-size pill/capsule micro-factory, using cartridges of drugs and bioresorbable polymer materials. Application scenarios would initially be clinical settings, then at later stage, pharmacy locations and local medical practices.

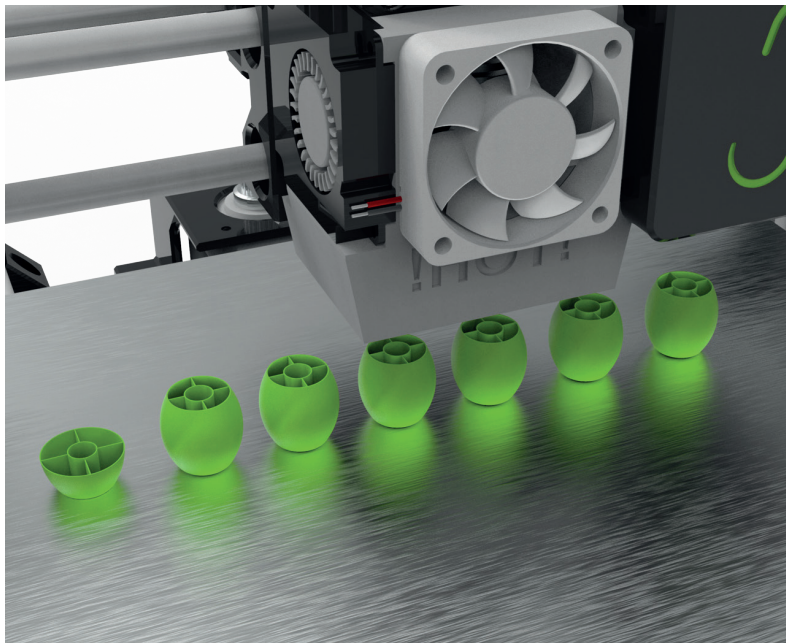
For patients, a single pill each day would contain all their medication, complemented by supple-

ments if needed, in quantities and release distributions that are optimised for the individual's needs and conditions

Personalised drug formulation is a hot topic, but state-of-the-art approaches are limited by low scalability, high cost, and regulatory hurdles. Meanwhile, current polypill formulation efforts are hindered by the conditions of their production, such as high heat or liquid form use.

Due to these difficulties, pill-split grooving is still the prevalent state-of-the-art in individual dosing.

The first development stage towards **PERaME**'s breakthrough solution will deliver a lab scale proof-of-concept prototype system to demonstrate the revolutionary potential and prove viability of the new approach to truly personalised medication.



Revolutionary User Experience

- Doctor writes your prescription
- **PERaME** selects the most suitable dosing and release profile to your individual need
- **PERaME** designs & produces your personalised medicine
- By the time you get to your local pharmacy, your **PERaME** medication is ready for pickup
- **PERaME** can continuously adjust your customised medicine to follow your condition

PERaME®

PERSONAL ADAPTIVE MEDICINE

point-of-care
microfactory
for personalised
medicine

We bring personal medicine to you by

Personal

- Adjusting your medical prescription to your body's individual dosage requirements
- Calculating the ideal release profile for each of your medications based on your condition
- Designing customised pills containing all your different medications, with individually tailored dosing and release rates

Adaptive

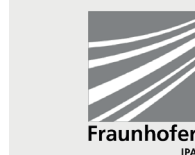
- Building the 3D pill composed of multiple configurations of micropockets, each programmed to release their content at just the right time
- Filling the micropockets with small discrete doses of your medications, ensuring identical application conditions to their original certification while revolutionizing their administration

Medicine

- Keeping medications in their ideal therapeutic window, known to maximise efficiency and reduce side effects
- Making polypharmacy adherence difficulties a thing of the past
- Offering synergistic medication customised to patient and condition
- Availability at local dispensing hubs

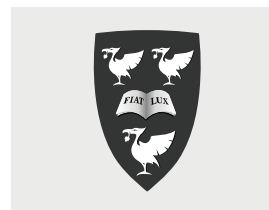
The Consortium

Coordinator



Fraunhofer Institute for Manufacturing, Engineering and Automation IPA

(DE)
European leader in applied research



University of Liverpool

(UK)
Pharma expert



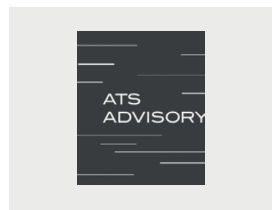
Loughborough University

(UK)
Additive manufacturing specialist



Bulakai Tanácsadó Kft

(HU)
Precision dosing innovator



ATS Advisory SRL

(BE)
Sustainability pro

PERAME[®]

PERSONAL ADAPTIVE MEDICINE

Contact

info@perame.eu
perame.eu



This project has received funding from the Horizon Europe Programme (Grant 101130241) and from UKRI (Grants 10099133 and 10100435)

European
Innovation
Council



UK Research
and Innovation