TorqueFuture

Project idea	Novel electric motor architecture: material-efficient design and joint validation
Organisation	TorqueFuture s. r. o., Bratislava, Slovakia
Addressed topics	**HORIZON-CL4-2027-01-MAT-PROD-22** Innovative advanced materials and new production processes – reducing dependencies on Critical and Strategic Raw Materials (IA) **HORIZON-CL4-2027-01-MAT-PROD-06** Circular innovative advanced materials: facilitating the transition from design to markets (RIA)

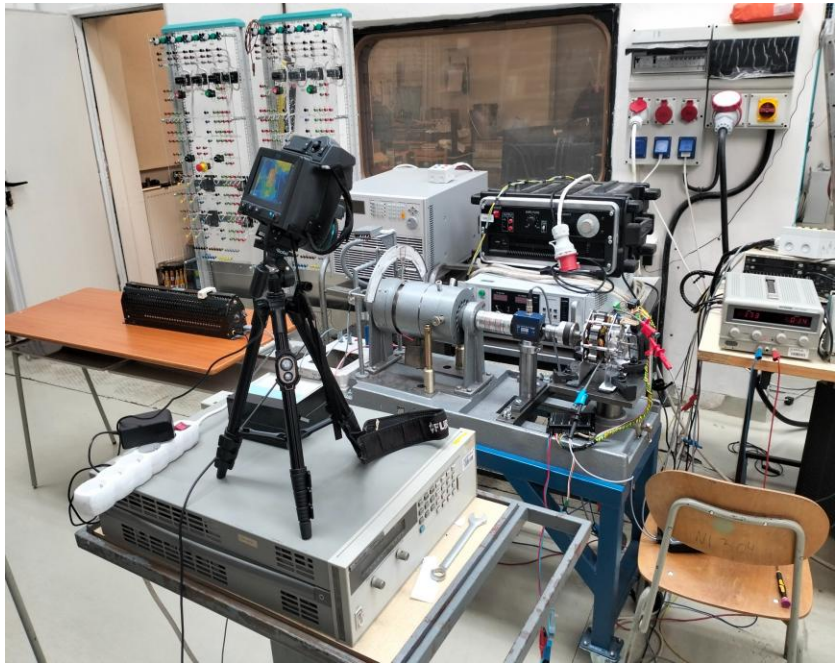
TorqueFuture s. r. o.

Slovak R&D company
Cooperation with UNIZA and STU.
Seeking first Horizon Europe project.

Patented motor architecture
SK patent 289 351.
EP application published as EP 4264789 A1.

High efficiency at low power
Efficiency of 89% to 94%, including
the power supply module.
Selected laboratory operating points.

Laboratory prototype
100–150 W class, approximately TRL 4.



Verification measurements
at UNIZA

Project idea: applications and scaling

Material efficiency (MAT-PROD-06, MAT-PROD-22)
Test ferrite-based designs and recycled magnets with materials partners.

Long-duty and battery-powered drives
Potential to reduce heat losses and energy use.

Scaling and generator research
Preliminary simulations suggest scaling potential.
Each power class needs its own design, prototype and validation.

Joint CL4 research and validation
Efficiency, temperature rise, reliability and life-cycle assessment.
Readiness targets matched to the selected topic.

Competences / partners sought

Coordinators and research organisations
Consortium development, electromagnetic modelling and independent validation.

Magnetic materials and circularity specialists
Ferrites, rotor alternatives, magnet reuse and life-cycle assessment.

Motor, electronics and manufacturing partners
Mechanical optimisation, control electronics and prototype production.

Industrial end users and system integrators
Use-case requirements, demonstrator integration and testing.

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