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### Material data from Ferroperm Piezoceramics available with latest version of COMSOL Multiphysics

Ferroperm Piezoceramics A/S, Danish developer and manufacturer of piezoelectric components, has reached an agreement with software company COMSOL to include data for several of Ferroperm's materials in the popular finite element modeling program COMSOL Multiphysics.

The agreement covers 10 of Ferroperm's ceramic materials, capable of converting mechanical energy into electrical energy and vice versa through the direct and converse piezoelectric effect. All of them are variants of the industry-standard piezoelectric material *lead zirconate titanate*, also known as *PZT*. The materials in question are:

[Pz23](#), [Pz27](#), [Pz29](#) (Soft-doped PZT)

[Pz24](#), [Pz26](#), [Pz89](#) (Hard-doped PZT)

[Pz34](#), [Pz54](#) (High-Intensity Focused Ultrasound (HIFU) PZT)

[Pz21](#) (Very soft relaxor PZT)

[Pz37HD](#) (Low acoustic impedance PZT)

With the version 6.2 of COMSOL Multiphysics that launched on 7<sup>th</sup> November 2023, users can access and apply the material data to simulate the behavior of different device designs.

*"We are excited to have reached this agreement with COMSOL,"* Erling Ringgaard, principal materials scientist at Ferroperm Piezoceramics, says. He continues:

*"The use of finite element modeling is commonplace in both academia and throughout the industry, and COMSOL Multiphysics is one of the best FEM programs available. With this agreement, we are looking to make piezoelectricity even more accessible for researchers and product developers alike, which will hopefully result in new and innovative technologies that utilize the piezoelectric effects."*

*"We are proud of our piezoceramic material data sets, which we have worked on for many years to measure and fine-tune. We have decided to release these data sets in the hope that they will be a useful tool for optimizing existing designs and testing new ideas – with more sets to come in future updates. We therefore encourage interested parties to reach out so we can explore new solutions together."*

Today, piezoelectricity is often used in sensor and actuator applications. In particular, the phenomenon is utilized to generate ultrasound, enabling for instance medical scanners and sonar equipment.

For further information or inquiries about the agreement, please contact:

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