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## Dielectric Nano-Fluid For Electrostatic Machines And Actuators

[View U.S. Patent No. 11,404,976 in PDF format.](#)

**WARF: P190170US01**

Inventors: Daniel Ludois, Daniel Klingenberg, Kevin Frankforter

### The Invention

An electrostatic machine employs a high dielectric fluid comprised of a dielectric liquid with suspended dielectric particles. Electrorheological effects are minimized through small particle sizes and steric coatings on those particles limiting the minimum particle-to-particle distance. Low particle volume densities provide greater torque density with managed reduced viscosity.

### Additional Information

#### For More Information About the Inventors

- [Daniel Ludois](#)
- [Daniel Klingenberg](#)

#### Tech Fields

- [Engineering : Electric machines](#)
- [Materials & Chemicals : Composites](#)

For current licensing status, please contact Emily Bauer at [emily@warf.org](mailto:emily@warf.org) or 608-960-9842

