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A Universal Model for Predicting the Effective Shear Modulus of Two-Dimensional Porous Materials

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Highlights

- A Large Porosity Model (LPM) is proposed to predict the effective shear modulus of two-dimensional (2D) porous materials with large porosities.
- Through bridging the LPM and the classic Three Phase Model (TPM), a Universal Porosity Model (UPM) is developed.
- UPM gives accurate predictions (relative error always less than 10%) of the shear modulus among the entire range of porosities (from 0% to 100%), for different Poisson ratios of the matrix materials.

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