

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

3D printed cat tongue is a self-cleaning, tangle-teasing brush

ALEXIS NOEL, DAVID HU, Georgia Inst of Tech — A cat's tongue is covered in an array of spines called papillae. These spines are thought to be used in grooming and rasping meat from bones of prey, although no mechanism has been given. We use high-speed video to film a cat grooming. We show that the spines on the tongue act as low pass filters for tangles in hair. The tongue itself is highly elastic, while the spines are rigid. We 3D print a cat tongue mimic and show that the nonlinear force applied by the spines helps to increase efficacy of grooming. The tongue also provides frictional anisotropy with backward-facing spines, allowing for self-cleaning properties post-groom.

Alexis Noel
Georgia Inst of Tech

Date submitted: 13 Nov 2016

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