



Electroosmotic pumping through porous anodic alumina templates

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OBJECTIVE

Construct a high flow rate, high back pressure pump that is scalable for micro to mesoscale fluid delivery.

IMPACT

Porous anodic alumina pumps:

- Provide multiple nanometer diameter channels in parallel with long-range order
- Reduces applied voltage while maintaining high electric field
- Provides the scaffold for an integrated screen electrode
- Yields high flow rate normalized by applied voltage and cross-sectional area

APPROACH

Deposit Pt as an electrode on both sides of the alumina template

Apply electric field across the alumina channels by probing the deposited Pt film

