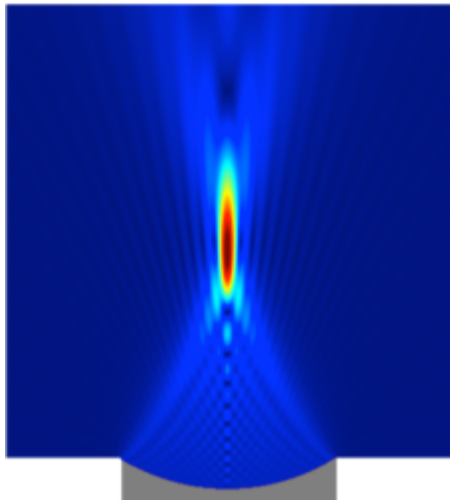


Energy Input Required to Initiate Cavitation

by AFA and traditional acoustic transducers

Covaris AFA

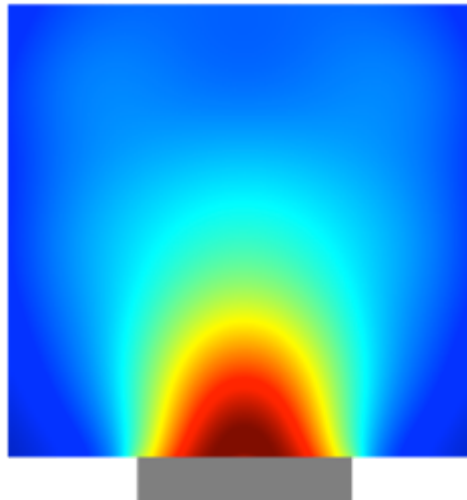
- focused transducer
- non-contact



0.8 Watt

Bath Sonicator

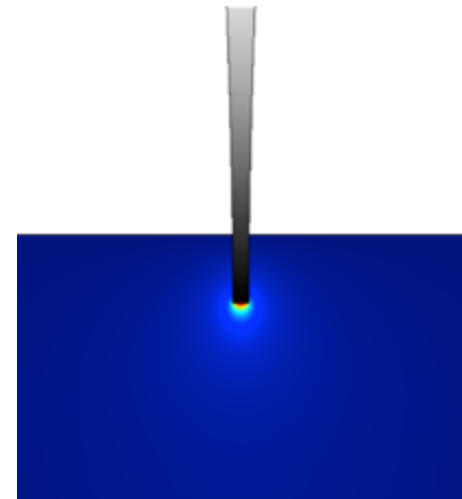
- unfocused transducer
- non-contact



130 Watt

Probe Sonicator

- focused waveguide
- sample contact



4.6 Watt

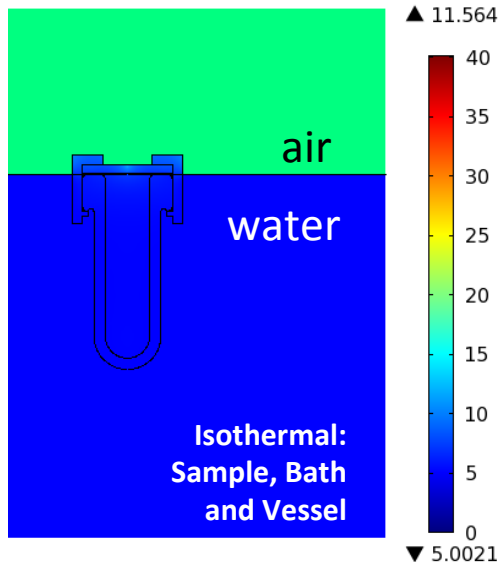
power input required to achieve 1 MPa (excess power becomes heat)

End of Process temperature profile

AFA versus traditional “sonicators”

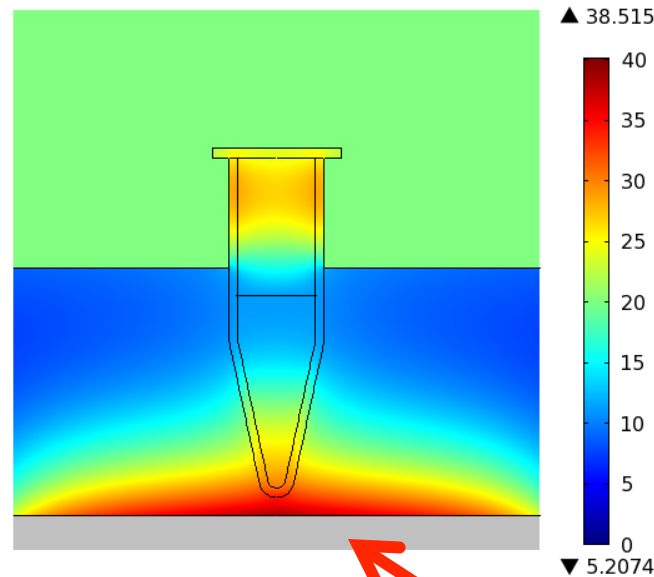
Covaris AFA

- Covaris microTUBE
- 2 MPa; at 180s



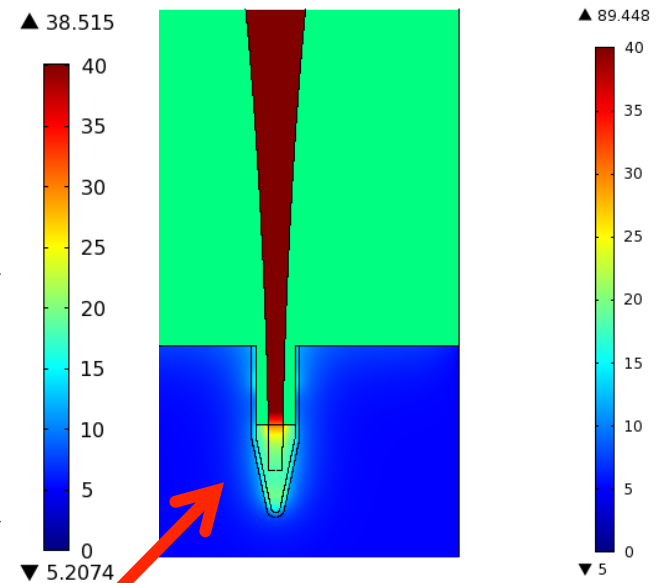
Bath sonicator

- Microfuge tube
- 2 MPa; at 600s



Probe sonicator

- Microfuge tube
- 2 MPa; at 300s



no thermal control

- NOTE: *at end of process* - AFA processing is isothermal as compared to bath and probe sonicators
- Controlled process allows for more rapid processing
- No thermal damage to samples