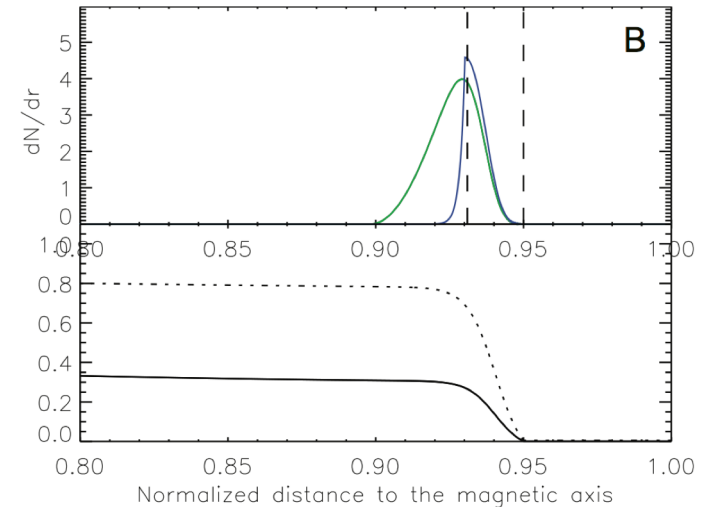


## Motivations

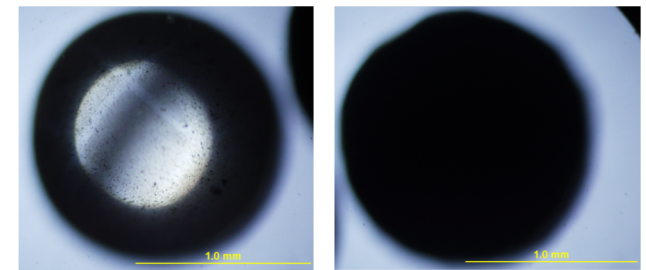
- Edge localized mode (ELM) pacing in tokamaks with impurity mass injections
- ELM pacing in long-pulse H-mode environment
- Minimizing impurity to the core

## Results Summary

- Models for impurity ablation are given
- Threshold pellet size found through BOUT++ simulations to trigger ELMs
- Hollow pellets can be as effective as solid core pellets with reduced plasma core contamination
- Prototype boron core-shell pellets are being developed



*Pellet ablation and transport model indicates that hollow pellet can be as effective for ELM triggering with reduced plasma contamination*



*left: A PMMA sphere that was used as a template for making boron sphere; right: A PMMA sphere coated by a layer of boron.*