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## **Innovative approaches in Inertial Confinement Fusion**

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Over the past few years we have been working on the development of a range of innovative techniques for application to Inertial Confinement Fusion. In particular, we have considered the use of burn-through barriers within hohlraums to enable drive independent profiling of the X-ray radiation flux onto a fuel capsule [1], and the use of intermediate-Z hohlraum liners to control M-band preheat [2]. These approaches have been developed using 1 and 2-D radiation hydrodynamics simulations and a 3-D view factor code. This work will be described in addition to some interesting results concerning fast ignition of an imploded fuel mass using X-ray radiation, which brought to light interesting new physics concerning the minimization of ignition energy with an X-ray drive due to its deposition profile in the compressed fuel [3].

### References

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2. W. Trickey, J. Owen, C.P. Ridgers, & J. Pasley., Phys. Plasmas. 27, 10, 7 p., 103301, 2020
3. J. G. Lee, A.P.L. Robinson, & J. Pasley, Phys. Plasmas. 27, 5 p., 042711, 2020