**Title**

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**Principal Investigator**

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| Title and full name :  Home institution and address :  Citizenship :  Phone :  E-mail : |

**Co-Investigators, expertise and references**

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| *Full name, home institution and citizenship. Describe the expertise of the team (including some significant recent references)* |

**Keywords**

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**Configuration required**

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| **PETAL alone  or with up to 10 LMJ quads** | **Fusion studies  (full LMJ)** | **Discovery science  (other configurations)** |

**Experimental platforms required (see User-Guide IX.3)**

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| **SXR** Soft X-Ray | **IMP** Implosion | **HXR** Hard X-ray Radiography, UHI | **OPA** EoS and Opacity | **TMS** Thermomechanical studies | **Other** |

**Summary**

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**Detailed description of the project**

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| ***- Scientific discussion:*** *Describe the purpose for the experiment, the key scientific questions addressed and the expected results.*  *-* ***Experimental method and set-up****: Describe the proposed experimental method; including laser energy, pulse shape and beam configuration, target requirements, experimental platforms with core and optional plasma diagnostics, and the number of laser shot requested (6 max).*  ***- Facility specificity****: Describe the extent to which the experiment is particularly suitable for LMJ-PETAL. Indicate which experiments have been or will be carried out by the team, on what facility, to prepare the proposed LMJ-PETAL experiment.*  ***- Capabilities and resources****: Provide an estimate of the capabilities and resources required to execute the experiment, in particular whether the target manufacturer is identified and the funding of targets manufacturing.* |

**Experimental configuration**

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| ***1. Experimental configuration at the target chamber center****, including realistic target dimensions and position of additional targets (backlighter if any).*  ***2. Laser configuration***  *For LMJ beams: selected spot sizes (User-Guide Table V.2 & Table IX.1) and optical smoothing conditions (2 or 2+14 GHz), laser pulse shape and energy per quad (Energy-Power diagram: User-Guide Figure V.9), laser aim points per quad (aim points should be specified in LMJ spherical coordinates system).*  *For PETAL beam: pulse duration (between 0.5 and 10 ps), energy and best focus position.*  ***3. Diagnostics configuration***  *Experimental platform with core and optional diagnostics (User-Guide Table IX.3). Specify the primary and secondary diagnostics for the physics goal.* |

**Target description**

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| *Sketch of the targets, including their dimensions, and the manufacturer of the targets. Information about materials, approximate thicknesses or dimensions resulting from technological constraints in target manufacturing may help in assessing debris generation risks. A detailed study of target debris generation will be undertaken later during the experimental process.* |

**Preliminary nuclear safety analysis**

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| *Rough estimate of the X-ray and/or neutrons and/or electrons and/or ions emitted spectra, with their angular distribution.*  *List of all the constitutive target materials with estimated mass.* |

**Preparation requirements**

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| *List of the experimental capabilities that need to be commissioned prior to the physics experiment: specific ns shaped pulse, PW laser contrast, characterization of specific hard X-ray or proton backlighting sources, etc. This does not imply CEA commitment to include all these commissioning’s in LMJ schedule* |

**Shots logic and draft failure modes**

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| *Order of the shots (6 shots per campaign at maximum), as well as the logic of the shots and the main possible failure modes (and backup plan).* |