**TÍTULO DEL PROYECTO:**

Machine learning optimization of high temperature superconducting films prepared by drop-on-demand inkjet printing

**IP:**

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**RESUMEN DE LA PROPUESTA:**

High-throughput experimental (HTE) methods are becoming more important in the field of materials science, representing a turning point in the accelerated discovery, development and optimization of materials. The versatility of drop-on-demand inkjet printing allows its implementation with HTE strategies for combinatorial chemistry studies by fabricating complex-shape test compositional gradient films, suitable for parallel characterization of morphological, structural and functional properties. This project will explore such approach together with advanced characterization techniques and the use of machine learning algorithms in order to push forward the optimization in growth and performance of high-temperature REBCO superconducting films, prepared following the recently developed transient-liquid assisted growth chemical solution deposition (TLAG-CSD) route where ultrafast growth rates, above 100 nm/s, are achieved. Altogether, the main aim is to promote the use of high temperature superconductors to reduce the negative impact of fossil fuels and enable the full transition to renewable energy alternatives.