

# SUSTAINABLE MATERIALS, PROCESSES AND SYSTEMS FOR ENERGY TRANSITION

## INRIM - Passive radiative emitters for daytime sub-ambient cooling

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| <b>Funded By</b>   | I.N.R.I.M. - ISTITUTO NAZIONALE DI RICERCA METROLOGICA<br>[Piva/CF:09261710017]   |
| <b>Supervisor</b>  | FASANO MATTEO - matteo.fasano@polito.it   |
| <b>Contact</b>   | FASANO MATTEO - matteo.fasano@polito.it<br>Lorenzo Pattelli - INRIM - l.pattelli@inrim.it<br>VITALE ALESSANDRA - alessandra.vitale@polito.it  |
| <b>Context of the<br/>research<br/>activity</b>                                    | Passive Radiative Cooling is a renewable cooling method based on reflecting all solar radiation while emitting thermal energy through the atmospheric transparency window. Research activities: development of engineered materials (micro/nano fabrication via electrospinning, phase inversion methods, etc.); optical and heat transfer modelling; engineering integration into a water-cooling apparatus. The scientific objectives will be tailored depending on the background of the successful candidate. (PaRaMetric project coordinated by INRiM, EU contribution of 2.347 M€). |
| <b>Objectives</b>  | Theme bound scholarship funded by INRiM<br>Scientific Responsibles:<br>Lorenzo Pattelli, INRiM, l.pattelli@inrim.it<br>Matteo Fasano, PoliTO, matteo.fasano@polito.it<br>Alessandra Vitale, PoliTO, alessandra.vitale@polito.it<br>Main seat to carry out the research activity: Politecnico di Torino and INRiM, Torino  |
| <b>Skills and<br/>competencies<br/>for the<br/>development of<br/>the activity</b> | Candidates should have a solid background in material science and engineering. Experience in thermodynamics, heat transfer or polymer processing/characterization, multi-physics modeling and electrospinning are a plus. Practical attitude for the lab activities and problem solving skills, and high motivation to learn through advanced research are appreciated. The PhD candidate will work in contact with different research groups on a highly multidisciplinary project, hence they must demonstrate adaptability in different environments.                                  |