



# INDIAN INSTITUTE OF TECHNOLOGY BOMBAY POWAI, MUMBAI 400076.

**Advertisement No.: IRCC/EXT019/2022**

## **Job Title**

Project Research Scientist

## **Job Reference Number**

50285301

## **Application End Date**

14.02.2022

## **Type of Employment**

Proj. Staff Contract

## **No. of Position(s)**

1

## **IITB Project Recruitment:**

Project title: LW-IR Signature Studies of 5th Generation Stealth Aircraft in Bottom view

About the project: Studies on passive infrared (IR) signature prediction, suppression, & management are crucial for survival of 5th gen. stealth aircraft. These aircraft must operate in an adverse environment comprising of passively guided IR homing MANPADS, SAMs, AAMs [in dual-band (MW-IR & LW-IR)], & IRST (in, LW-IR). Efforts to reduce radar & LW-IR (8-12  $\mu\text{m}$  band) signature must be balanced, as radar stealthy aircraft can be passively detected, identified, & tracked by co-located ground-based IRST. It is important to study LW-IR signature in aircraft bottom view, due to skin friction heating & earthshine reflection.

## **Essential Qualifications & Experience:**

PhD in Aerospace Eng. with strong Mathematics & Heat Transfer background. Desired Experience: Research in Radiative Transfer

## **Job Profile:**

- 1) Role of skin friction heating & background LW-IR radiance to be modeled, for studying variation with flight Mach number, altitude (h), & emissivity of bottom surface.
- 2) Dimensionless ratio of emission due to skin friction heating by reflection of earthshine irradiance to be used to study importance of earthshine. Effect of atmospheric transmission between visible earth-disc & aircraft to be included for studying variation of earthshine irradiance with h.
- 3) Appropriate design emissivity & its criterion to be arrived at & shown for following aircraft types: (a) turboprop military transport aircraft; (b) long-range, subsonic, jet-powered strategic heavy bomber; (c) 5th generation stealth fighter with super-cruise capability.

## **Pay Details:**

Level PR-O2: Salary range from Rs.42000 to Rs 84000 + Rs.7500.00/- Out Of Campus Allowance (if applicable) p.m.

## **General information:**

The position is temporary for a period of 1 year and tenable only for the duration of the project.

The appointment is for time bound project and the candidate is required to work mainly for the successful completion of the project. The selection committee may offer lower or higher designation and lower or higher salary depending upon the experience and performance of the candidate in the interview.

Candidates called for interview will be required to attend at his/ her own expenses.

For any queries/clarification please contact: [recruit@ircc.iitb.ac.in](mailto:recruit@ircc.iitb.ac.in)