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Research Assistant Position Available – Development of Multifunctional High-Strength Cold Spray High Entropy Alloy System (Masters or Doctoral Opportunity)

The Position

Dr. André McDonald of the Department of Mechanical Engineering at the University of Alberta invites applications and queries for a Master of Science or doctoral (PhD) position in **Development of Multifunctional High-Strength Cold Spray High Entropy Alloy System**. The position will be open to candidates who possess a Bachelor or Master of Science degree in either Mechanical Engineering or Materials Science. Applicants with expertise and experience in cold spraying, thermal spraying, materials science, heat transfer, and/or particulate-reinforced composite materials are highly encouraged to apply. The successful candidate will be required to work independently and must communicate well in English. The successful candidate will be financially supported. This position is available to Canadian citizens, permanent residents of Canada, and international applicants. It is expected that the successful candidate will take up the position in either September 2022 or January 2023. Interested candidates may wish to visit <https://sites.ualberta.ca/~andre2/> to learn more about the Advanced Heat Transfer and Surface Technologies Laboratory.

The Project

The proposed research project seeks to develop a fundamental understanding of the wear, damage, and energy generation behavior of stabilized cold-sprayed high entropy alloy coatings for repair and surface heating applications. The outcomes of the project will be to produce high-performance wear resistant material systems that are energy generating. The candidate will develop results to inform on the development of a localized in-field deposition system. Collaboration with the National Research Council Canada and the Department of National Defence may occur.

Training and Professional Development Opportunity

The training of research assistants and fellows is paramount. The selected candidate will receive formal training in the following practical areas: (i) surface preparation, (ii) high-quality overlay development, (iii) equipment handling, and (iv) safety. The trainee will have opportunities to participate in national and international conferences and receive exposure to Dr. McDonald's expansive professional network.

Application Procedure

Candidates are asked to submit complete applications, which include: (i) a cover letter; (ii) a detailed curriculum vitae highlighting career achievements, relevant areas of research, a list of publications, awards and honours, and a list of three professional references; (iii) a statement of research interest, expertise, and experience (maximum 1 page); and (iv) three samples of the candidate's most significant scholarly work. Additional documents may be requested upon submission of the aforementioned documents.

The review of applications will begin immediately, and applications will be accepted until the position has been filled.

Interested candidates should send their completed application packages and direct queries to **Dr. André McDonald** at andre.mcdonald@ualberta.ca.