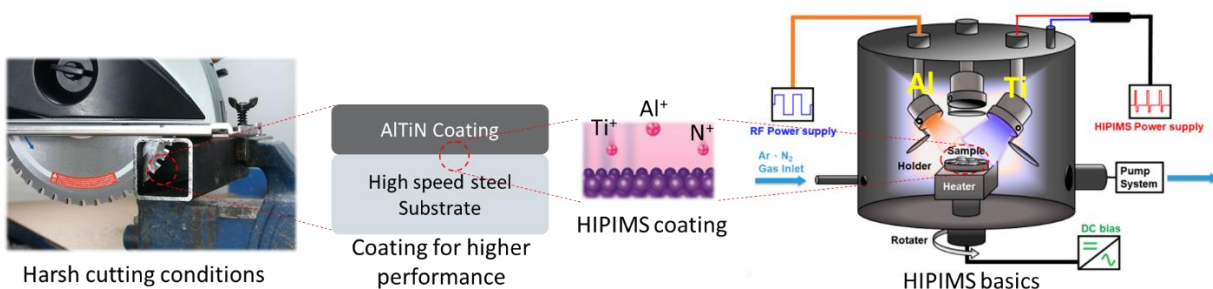


MSc Assignment

Ignite Your Journey in HIPIMS Coating

Approach

Circular saw blades are vital for material cutting, undergoing a specialized coating process to enhance performance. This hard coating not only minimizes wear and friction but also acts as a thermal barrier, safeguarding the substrate during cutting. Techniques like Physical Vapor Deposition (PVD) are employed, with High-Power Impulse Magnetron Sputtering (HIPIMS) standing out in the PVD field. HIPIMS creates coatings through brief, intense electrical pulses, transforming a metal target into a dense, ionized plasma that adheres to the blade surface, forming a thin film with superior properties. Join us in hands-on labs with Kinkelder, a cutting industry pioneer, blending academic expertise with practical application. Together, we aim to advance HIPIMS coating technologies for a real-world impact.



Research group & Company

We seek a motivated master's student to contribute to our project by optimizing HIPIMS coating parameters specifically for circular saw blades. The goal is to create a HIPIMS-coated circular saw blade that outperforms blades coated with older technologies. The assignment will be experts with the Kinkelder company in collaboration with the Surface Technology and Tribology (STT) chair at UT.



Curious about HIPIMS technology? Scan the QR code to learn more!

We offer:

This internship offers practical skills, cutting-edge research, and a holistic experience in HIPIMS coating development. Embrace the challenge; unlock your potential in shaping the future of surface engineering. Immerse yourself in the operation and understanding of state-of-the-art HIPIMS coating machines. Gain expertise in SEM, scratch tests, nano-indentation, and tribometers.

Tasks:

- Conduct a brief literature review on optimal coatings for cutting technology.
- Enhance coating performance through recipe modifications after training.
- Dive into characterization tests on developed coatings.
- If the coating exhibits desired properties, apply it to a circular saw blade and conduct a real cutting test.
- Craft a concise report summarizing impactful results.

Contact:

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