# Zen Graphene Solutions announces research results for aluminium composites

**ZEN Graphene Solutions (TSX.V: ZEN)**

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**ZEN Graphene Solutions Ltd.** (TSXV: ZEN) ("**ZEN**" or the "**Company**") is pleased to announce additional research and development results using a ZEN Graphene additive in a sintered aluminium metal composite and ZEN Graphene in a corrosion-inhibiting coating.

The Company very recently received additional encouraging preliminary results from the University of British Columbia-Okanagan (UBC-O) which has used ZEN's Graphene to enhance the performance of aluminum casting alloys. UBC-O has mixed small volumes of Graphene with an aluminum powder which was then sintered in Spark Plasma Sintering (SPS) equipment.

Preliminary results indicate that the Graphene resulted in a significant increase in the electrical conductivity of the material with a relatively small Graphene loading. **Dr. Bichler commented:** *"Aluminum with increased conductivity would have vast industrial applications."* Test work will continue to optimize the Graphene loading to optimize the electrical conductivity of the aluminum along with improvements in the thermal and mechanical properties.

Additionally, UBC-O reported encouraging preliminary results on the use of ZEN's Graphene in an epoxy corrosion-inhibiting coating for steel. UBC-O tested four samples of steel: one uncoated, one coated with epoxy only, one coated with an epoxy-graphite mixture, and one with an epoxy-Graphene mixture. The four samples were then exposed to a corrosive, highly saline solution for 10 days after which the level of surface of corrosion was examined and quantified. The following preliminary observations were reported by UBC-O:

- Uncoated steel – 100% of surface corroded

- Epoxy-coated steel – 67% of surface corroded
- Epoxy-graphite mix coated surface – 93% of surface corroded
- Epoxy-Graphene mix coated surface – only 3% of surface corroded

These promising anti-corrosion results from the Epoxy-Graphene mix coated surface will be followed up by additional test work to optimize the Graphene loading in the epoxy resin to potentially develop an anti-corrosion coating application.

**Dr. Francis Dubé commented:** *"We continue to be impressed with the creative research and development work being accomplished at UBC-O. These potential applications could lead to patents and significant markets for the Company. ZEN will continue to support UBC-O as per our 3 year Memorandum of Understanding signed in June of this year."*