

CWSF 2015 - Fredericton, New Brunswick



Alexander Stead, David Weaver

Iron Nanoparticle Based In-Situ Anti-Coagulant Delivery

Challenge: Innovation

Category: Senior

Region: Vancouver Island

City: North Saanich, BC, Victoria, BC

School: Glenlyon Norfolk School

Abstract: The goal of this study is to determine a method for the directing of Anti-Coagulants throughout the human bloodstream. In order to do so, iron nanoparticles are created, and anti-coagulants are bonded to these nanoparticles. These nanoparticles are then directed to the area of concern via a neodymium magnet outside of the body. This shall be illustrated using synthetic substitutes for blood and blood vessels.

Biographies

Alexander - I am a Grade 11 student at Glenlyon Norfolk School in Victoria, BC. I enjoy everything aviation-related, and am working towards obtaining my private pilots licence. I also enjoy spending time reading novels and going rock climbing. I hope to attend University for a BSc, and later go on to a career in Medicine. David Weaver and I were inspired by our common interest in medicine to study the topic of magnetic drug delivery for our science fair project. There are many potential applications for this 'in the real world,' namely, the potential for this method of drug delivery with more advanced procedures, such as with chemotherapy. We hope to fur...

David - Hi, my name is David Weaver, and I'm a Grade 11 student at Glenlyon Norfolk School in Victoria, BC. Other than science fair, I am an avid member of debate in Canada, having just come back from the National championships a fortnight ago. I also play soccer with a club, and enjoy slacklining in the glimpses of spare time I get. The inspiration for this project came after doing some research on the failure of modern medicine to directly target specific locations. For further investigations, we plan to use more potent anticoagulants such as warfarin, or low-molecular weight heparin, and possibly test the efficiency with comparative testing to the...

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