

# International Summit on Past and Present Research Systems of Green Chemistry

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## Pharmaceutical drug discovery and green chemistry approach through nanotechnology

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Bioanalysis is the science of analyzing biological samples for the presence of therapeutic drug after dosing during clinical trials. The amount of bio-hazardous material generated during the analysis has two sources. The first source is the patient biological samples of at least 500  $\mu$ L of serum or plasma. The second source is the reagents used in the enzyme linked immunoassay (ELISA) which could be up to 50 mL per analysis (when you have 5000 samples in any trial this amount is 250,000 mL). The trend to move towards a green chemistry which was focused on chemical reactors is now reaching the bioanalytical world in the drug development in the pharmaceutical companies. In the bioanalytical world, there are many approaches to utilize green chemistry and minimize bio-hazardous and minimize waste. The one approach that is considered the most promising and looked at as the future is the use of a new technology called Gyros. Gyros technology utilizes nano chemistry and is in compliance with green chemistry thinking. The hazardous material are 10 times less than that generated by traditional ELISA and the patient sample volume is 100 times less than that required by traditional ELISA. Additionally, nano technology does not use mercury or mercury related products, which is an added advantage. The presentation will focus on comparing the two scientific platforms and outlining the conversion of the traditional ELISA method to the nano technology (Gyros) platform. The benefit to our global environment is most recognized and quantified to support this futuristic science, as we move towards a more responsible method to keep our globe green.

### Biography

Jamil Hantash is in the process of completing his PhD from UQAM University as he is holding the position of Senior Technical Director at Tandem Labs (Labcorp) a premier Bio-analysis contract research organization (CRO). He held senior level research positions at Merck, and other CROs for many years. He has published more than 20 papers in reputed journals and national and international conferences.

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