

Abstract Submitted
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HemaDropTM – A New Technology To Perform Blood Analysis On Microliter Sized Droplets Of Blood By Creating Homogeneous Thin Solid Films (HTSF): Elemental Analysis Study As A Function Of Sampled Blood Volume¹ H L THINAKARAN, Y W PERSHAD, N HERBOTS, A O MARTINEZ, S M SUHARTONO, A P KRISHNAN, R J CULBERTSON, S D WHALEY, M W MANGUS, B J WILKENS, Arizona State University — Currently, blood diagnostics requires 7 milliliters of blood, causing anemia in chronically ill or pediatric patients. Decreasing that volume by three orders of magnitude eliminates that iatrogenic problem. HemaDropTM[1] congeals microliters-sized droplets of blood into Homogenous Thin Solid Films (HTSFs) as solid samples for analysis [2] via hyper-hydrophilic surfaces so droplets form a planar HTSF without phase segregation. HTSF's enables blood to be characterized by Ion Beam Analysis (IBA). The damage curve method is used to account for ion beam damage.. After an initial study on canine blood [2], IBA is conducted on human blood. Blood diagnostics need reproducible, accurate results. To establish whether IBA meets this need on HemaDropTMHTSF, IBA elemental concentration is measured as a function of HemaDropTM droplets size. [1] International & US Patent Herbots *et al* (2016) [2] Pershad Y, Herbots N et al, MRS Advances (2016)

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