Abstract Submitted
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Fast, Comprehensive, Accurate Small Volume Blood Diagnostics on Blood Drops via an Inexpensive Hand-held Collection Device, InnovaStrip and a Fast Blood Analysis App[1] A. THINAKARAN, A. SURESH, R. RANE, A. SEKAR, W. PENG, T. BALLASOORIYA, N. SURESH, A. GURIJALA, L. PUGLISI, S. SWAMINATHAN, EJ CULBERTSON, RJ CULBERTSON, N. HERBOTS, Arizona State U., ASU-ISIO2 COLLABORATION — Blood Diagnostics (BD) need mLs of blood, leading to Hospital Acquired Anemia in the chronically ill and infants. BD can take days for results, delaying treatment. A cheap, fast, portable BD device, InnovaStrip ^{TM}, is developed here for accurate Small Volume BD via a *hyper-hydrophilic* coating, HemaDrop^{TM}. *Hyper-hydrophilicity* flattens droplets into flat, uniform films by absorbing H_2O in blood in minutes via rapid solidification into Homogeneous Thin Solid Films (HTSF) *without coagulation.* HTSFs can be analyzed via hand-held X-ray Fluorescence (XRF) and Ion Beam Analysis (IBA). XRF and IBA can yield blood levels of electrolytes, Fe, heavy metals and radionuclides with an accuracy $\leq$ +/-10% in minutes. An App ,'Fast Accurate Blood Analysis', or FABA, converts data in blood levels as mg/dL, the medically accepted units in BD. InnovaStrip yields with FABA inexpensive, hand-held, blood levels of electrolytes, Fe, and metals, and has a high potential for deployment in remote and underserved areas with limited access to diagnostic labs

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