

Abstract Submitted
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Water-encapsulated protein source for x-ray serial crystallography¹ D.P. DEPONTE, U. WEIERSTALL, R.B. DOAK, J.H.C. SPENCE, G. HEMBREE, J. WARNER, D. STARODUB, Department of Physics, Arizona State University, Tempe, AZ 85287, USA, M. HUNTER, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ 85287, USA — A reliable source of micron size water droplets has been constructed for the purpose of delivering water-encapsulated protein for x-ray serial crystallography. A linear stream of droplets of negligible divergence is produced by accelerating a liquid water jet through a high pressure gradient [1] inside a converging gas nozzle. Using a co-flowing gas rather than the nozzle walls to squeeze the liquid jet to smaller diameter eliminates the problem of clogging that has thus far limited the minimum size of Rayleigh nozzle jets [2]. Converging jets tend to align non-spherical particles suspended in the liquid and we are presently investigating the possibility of fiber diffraction from drops of aligned macromolecules produced by this method. [1] Ganan-Calvo, A.M. and A. Barrero, *A novel pneumatic technique to generate steady capillary microjets*. Journal of Aerosol Science, 1999. **30**(1): p. 117-125 [2] <http://arxiv.org/abs/physics/0701129>

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D.P. DePonte
Department of Physics, Arizona State University, Tempe, AZ 85287, USA

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