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Water-encapsulated protein source for x-ray serial crystallography DANIEL DEPONTE, U. WEIERSTALL, R.B. DOAK, J.H.C. SPENCE, Arizona State University, D. STARODUB, Arizona State University, Physics Dept., M. HUNTER, P. FROMME, Arizona State University, Chemistry Dept., D. SHAPIRO, Advanced Light Source, LBNL — 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]. We examine the nozzle shape effects on the dripping-jetting transition and drop size. Supported by NSF award IDBR 0555845 and ARO award DAAD190010500. [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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