Structural Fingerprinting of Nanocrystals in the Transmission Electron Microscope[1] SERGEI ROUVIMOV, PAVEL PLACHINDA, PETER MOECK, Portland State University, NANO-CRYSTALLOGRAPHY GROUP TEAM — Three novel strategies for the structurally identification of nanocrystals in a transmission electron microscope are presented. Either a single high-resolution transmission electron microscopy image [1] or a single precession electron diffractogram (PED) [2] may be employed. PEDs from fine-grained crystal powders may also be utilized. Automation of the former two strategies is in progress and shall lead to statistically significant results on ensembles of nanocrystals. Open-access databases such as the Crystallography Open Database which provides more than 81,500 crystal structure data sets [3] or its mainly inorganic and educational subsets [4] may be utilized. [1] http://www.scientificjournals.org/journals 2007/j_of_dissertation.htm [2] P. Moeck and S. Rouvimov, in: *Drugs and the Pharmaceutical Sciences*, Vol. 191, 2009, 270-313 [3] http://cod.ibt.lt, http://www.crystallography.net, http://cod.ensicaen.fr, http://nanocrystallography.org, http://nanocrystallography.net, http://journals.iucr.org/j/issues/2009/04/00/kk5039/kk5039.pdf [4] http://nanocrystallography.research.pdx.edu/CIF-searchable

[1]Oregon Nanoscience and Microtechnologies Institute, www.onami.us

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