

Abstract Submitted
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Simulated synthesis of lithium manganese oxide nanostructures and their characterisation.¹ PHUTI NGOEPE, SYLVIA LEDWABA, University of Limpopo, Sovenga, 0727, South Africa., DEAN SAYLE, University of Kent, Canterbury, CT2 7NZ, UK — Simulated amorphisation recrystallization methods, are now routinely used to generate models of various nano-architectures for metal oxides with complex microstructural details [1]. Nano-architectures, i.e. nano- sphere, sheet, porous and bulk, associated with the Li-Mn-O ternary were synthesised from amorphous spinel nanosphere. The resulting crystallised nanostructures are characterised from visual images, radial distribution functions, XRDs and simulated microstructures. An analysis of microstructures and simulated X-ray diffractions reveals the presence of the layered Li_2MnO_3 and spinel LiMn_2O_4 together with a wide variety of defects, including grain boundaries and ion vacancies. [1] T.X.T. Sayle, R.R. Maphanga, P. E. Ngoepe and D. C. Sayle, J. Am. Chem. Soc., **131** (2009), 6161-6173

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