s8.m27.p2 **Crystal-structure determination of β'-stable triacylglycerides of the type $C_nC_{n+2}C_n$ (n = even).** Dirk J.A. De Ridder, Mihaela M. Pop, Jan B. van Mechelen, Kees Goubitz, Daan Pruissen, René Driessen, René Peschar and Henk Schenk, *Laboratory for Crystallography, van 't Hoff Institute of Molecular Sciences, Faculty of Science, University of Amsterdam, Nieuwe Achtergracht 166, NL-1018 WV Amsterdam, The Netherlands. E-mail: dirkdr@science.uva.nl*

Keywords: Polymorphism; High-resolution Powder diffraction; Phase transition

Long-chain compounds such as triacylglycerides often show polymorphic behaviour. In general, triacylglycerides crystallize in two (α and β') or three (α, β' and β) different phases, each having its own characteristic physical properties. For identification X-ray powder diffraction is a suitable technique since each polymorph has its own distinctive diffraction pattern. In the case of di-acid even-numbered triacylglycerides ($C_nC_{n+2}C_n$, n = even) the β'-phase is the most stable phase [1]. In this work we will discuss the most recent results of CLC, LML and PSP [C = caproyl (n = 10); L = lauroyl (n = 12); M = myristoyl (n = 14); P = palmitoyl (n = 16); S = stearoyl (n = 18)]. High-resolution synchrotron powder data of CLC and PSP were collected at the ESRF; LML was measured in-house on an X'Pert Alpha diffractometer. LML and PSP were measured at room temperature; CLC at 100, 150, 200, 250, 295 K. Structure determination was performed using a simulated annealing procedure with the program FOX [2]. The models were optimised with a bond- and angle-restrained Rietveld refinement as available in GSAS [3]. The results of the β'-phase of PSP will also be compared with its less known β-phase [4].

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s8.m27.p3 **Effects of Er substitution for Nd on structural and magnetic properties of $Nd_{1-x}Er_xMn_2Ge_2$ ($0 \leq x \leq 1$),** I. Dincer, A. Elmali and Y. Elerman, *Ankara University, Faculty of Engineering, Department of Engineering Physics, 06100 Besevler-Ankara, Turkey. E-mail: idincer@eng.ankara.edu.tr*

Keywords: Magnetic phase transition; Layered magnetic structures; Magnetic measurements

Investigations of magnetic phase transitions in intermetallic compounds of the RT_2X_2 type (R is a rare earth, T is a 3d metal, and X is germanium or silicon) are desirable because they can provide information on the magnetic processes and magnetic structures of such alloys and on the nature of magnetic phase transitions. The RMn_2X_2 compounds form a distinct group since, unlike other transitions metals, ferro- or antiferromagnetic Mn sublattice orderings (T~300-500 K) are observed. The magnetic properties of these compounds are very sensitive to the *intra*layer Mn-Mn spacing $d^a_{Mn\text{-}Mn}$ [1-2].

The structure and magnetic properties of $Nd_{1-x}Er_xMn_2Ge_2$ ($0.0 \leq x \leq 1$) were studied by X-ray powder diffraction and magnetization measurements. All compounds crystallize in the $ThCr_2Si_2$-type structure with space group *I4/mmm*. Substitution of Er for Nd led to a linear decrease in the lattice constants and the unit cell volume. Increasing substitution of Er for Nd in $NdMn_2Ge_2$ shows a depression of ferromagnetic ordering and the gradual development of antiferromagnetic ordering. A typical $SmMn_2Ge_2$-like behaviour is observed for the x = 0.4 sample. The results are summarized in the $Nd_{1-x}Er_xMn_2Ge_2$ magnetic phase diagram [3].

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