3D-[Pr(Im)$_3$(ImH)]@ImH: Ein dreidimensionales Netzwerk mit vollständiger Stickstoffkoordination aus einer Imidazolschmelze*

3D-[Pr(Im)$_3$(ImH)]@ImH: A Three-Dimensional Network with Complete Nitrogen Coordination Obtained from an Imidazole Melt*

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The reaction of a melt of unsubstituted imidazole with praseodymium metal yields bright green crystals of 3D-[Pr(Im)$_3$(ImH)]@ImH. Imidazolate ligands coordinate η^1 *via* both N atoms their 1,3 positioning within the heterocycle being responsible for the connection of praseodymium atoms. A 3-dimensional network is formed with imidazole molecules from the melt intercalated in the crystal structure. The imidazole molecules can be released and temperature dependent reversibly be exchanged with gas molecules including argon. Thus the solvent free high temperature synthesis of rare earth elements with amine melts can also be utilized for "crystal engineering" and the synthesis of compounds with material science aspects. Furthermore 3D-[Pr(Im)$_3$(ImH)]@ImH is the first unsubstituted imidazolate of the lanthanides.

Key words: Lanthanides, Imidazole, Crystal Structure, Crystal Engineering, Praseodymium