

GUGLIDZE, Tatiana, DEMENTIEV, Igor, GONCEARENCO, Evghenii, NEDEOGLO, Natalia, IURIEVA, Tatiana, NEDEOGLO, Dumitru. Luminescent properties on ZnO:Cr nanocrystals and thin layers. In: *IFMBE Proceedings*. Ediția a 4-a, 18-21 septembrie 2019, Chișinău. Switzerland: Springer Nature Switzerland AG, 2020, pp. 133-136. ISBN 978-303031865-9.

Both undoped and chromium doped zinc oxide nanocrystal powders are obtained by chemical deposition and hydrothermal methods. ZnO and ZnO:Cr thin layers on the surface of ZnSe and ZnSe:Cr samples, respectively, are obtained by isovalent substitution of selenium by oxygen in the process of thermal treatment of the samples in air. Photoluminescence spectra of the ZnO and ZnO:Cr nanopowders and thin layers obtained by various techniques are investigated at room temperature. Cr doped ZnO powders obtained by chemical deposition and hydrothermal methods improves the powder quality, as evidenced exciton emission is more intensive. New emission bands are found in visible (615 nm, 625 nm) and infrared (925 nm, ~2000 nm) spectral ranges for ZnO:Cr nanopowders and thin films. The contribution of Cr impurity to the formation of emission bands is discussed.