

## CHARGE-TRANSFER CHEMISTRY OF CHALCOGEN-NITROGEN II-HETEROCYCLES

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Chalcogen-nitrogen  $\pi$ -heterocycles (chalcogen: S, Se and Te) and their derivatives and hybrids possessing positive electron affinity (EA) are used in the design and synthesis of perspective multifunctional building blocks for molecule-based magnetic, conducting and light-emitting functional materials.<sup>1-5</sup>



This report will present and discuss recent achievements in the charge-transfer chemistry of the title heterocycles, mostly 1,2,5-chalcogenadiazoles. A large series of these species with EAs up to ~3 eV were designed on the basis of quantum chemical calculations.<sup>6</sup> Derived radical anions (RAs), RA salts, charge-transfer (CT) complexes, and metal coordination compounds were prepared and structurally and functionally characterized. Magnetic properties of RA salts, photoconductivity of CT complexes, and light-emitting properties of metal coordination compounds were studied experimentally and analyzed using DFT calculations.

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