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Recent results on nobelium isotopes spectroscopy @ SHELS

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The very/super-heavy nuclei area is a unique laboratory in the nuclear chart for the fundamental study of the atomic nucleus since excitation and decay modes are governed by the competition between the short-range strong nuclear interaction, long-range Coulomb repulsion, surface effects and the properties of individual quasiparticle states. For such studies, a wide scientific program has been launched at the FLNR Dubna laboratory with the emergence of new experimental setups such as the SHELS separator [1] and its focal plane detection system, GABRIELA [2]. Thanks to the high α , γ and ICE efficiency detection, some really new results on nobelium isotopes will be presented. Namely, the first γ and ICE spectroscopy of the ^{256}No nucleus [3] and the revisiting of the ^{254}No level scheme with an indication of a possible shape coexistence/superdeformed state.

[1] Popeko, A. G. et al. *Separator for Heavy Element Spectroscopy - velocity filter SHELS*. Nucl. Instrum. Methods Phys. Res. B **376**, 140-143, doi:10.1016/j.nimb.2016.03.045 (2016).

[2] Hauschild, K. et al. *GABRIELA: A new detector array for gamma-ray and conversion electron spectroscopy of transfermium elements*. Nucl. Instrum. Methods **560**, 388-394 (2006).

[3] Kessaci, K. et al. Evidence of high- K isomerism in $^{256}_{102}\text{No}_{154}$. Phys. Rev. C **104**, 044609, doi:10.1103/PhysRevC.104.044609 (2021).

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