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Polaron Theory of the Emission Current in a Cathode-Adsorbed Nanofilm System at the Initial Stage of a High-Voltage Gas Discharge

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A generalized formula has been derived for the current density of electron emission from a cathode coated with adsorbed non-metal nanofilm. Quantum contributions to the Nordheim function have been found which take into account the polaronic nature of the electron tunneling in this type of system.