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U.S. Department of Energy
Categorical Exclusion Determination Form

Project Title: Determining Distribution Coefficients by Surface-enhanced Raman Spectroscopy (SERS)

Program or Field Office: Savannah River Site

Location(s) (City/County/State): Aiken/Aiken/South Carolina

Proposed Action or Project Description:
The activity includes reducing gold(III) on Monosodium Titanate (MST) and coating MST on gold nanoparticles. The finished material is evaluated for its sorption capacity for 90Sr and 154Eu (gamma emitter). The loaded gold-MST composite is then evaluated for enhanced Raman scattering under wet conditions using a class 3B laser.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of 10 CFR Part 1021.

☒ There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

☒ This proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or § 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

☒ All of the conditions that are integral elements of the classes of actions in Appendix B to Subpart D of 10 CFR Part 1021 would be met. This proposal would not threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of Appendix B to Subpart D of 10 CFR Part 1021; involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements.

Based on my review of information conveyed to me and in my possession (or attached) concerning the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer: Andrew R. Grainger Digitally signed by Andrew R. Grainger DN: cn=Andrew R. Grainger, o=DOE-SR, ou=EQMD, email=drew.grainger@srs.gov, c=US Date: 2013.05.15 15:49:15 -04'00' Date Determined: 05/14/2013

Comments: TC-A-2013-0059, Rev. 0