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YOON et al.(10) **Pub. No.: US 2024/0237536 A1**(43) **Pub. Date: Jul. 11, 2024**(54) **ORGANIC THERMOELECTRIC ASSEMBLY WITH IMPROVED THERMOELECTRIC PERFORMANCE OF SATURATED MOLECULES USING NONCOVALENT ANCHOR-INDUCED ELECTRON DOPING OF SINGLE LAYER GRAPHENE ELECTRODE AND ORGANIC THERMOELECTRIC DEVICE INCLUDING SAME**(71) Applicant: **KOREA UNIVERSITY RESEARCH AND BUSINESS FOUNDATION,**  
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(57)

**ABSTRACT**

The present invention relates to a nanoscale thermoelectric assembly assembled through non-covalent contact between graphene and molecules, and a thermoelectric device comprising same. The present invention ascertains an increase in the Seebeck value due to n-type doping induced by an electron interaction in non-covalent contact of molecules, and confirms the length dependence of the Seebeck value in a graphene-alkylamine SAM system, thereby enabling the development and industrial application of efficient organic thermoelectric devices at a molecular scale.

