

Title (en)

IMPROVED THERMOELECTRIC UNIT WITH ELECTRIC INPUT/OUTPUT PROVISION

Title (de)

VERBESSERTE THERMOELEKTRISCHE EINHEIT MIT ELEKTRISCHE INPUT/OUTPUT ANORDNUNG

Title (fr)

UNITE THERMOELECTRIQUE AMELIOREEE A DISPOSITIF D'ENTREE/SORTIE ELECTRIQUE

Publication

EP 0907972 A1 19990414 (EN)

Application

EP 97929678 A 19970509

Priority

- US 9707922 W 19970509
- US 1752196 P 19960510

Abstract (en)

[origin: WO9743790A1] A series of closely packed thermocouples formed into a torus (60) are held in compression against the Lorentz Force by a dielectrically insulated tie strap (61). High current circulates through the torus (60) due to reduced electrical path length effected by low-thermal-conductivity elements (64) and grooves (38) formed in hot and cold fins (66 and 65). Reduced heat transfer between hot and cold fins (66 and 65) generates higher circulating current. Thermoelectric junctions formed between the hot and cold fins (66 and 65) and the low-thermal-conductivity elements (64) are preferably established by coated layer(s) (67) of dissimilar materials including bismuth, constantan, nickel, selenium, tellurium, silicon, germanium, antimony, nichrome, iron, cadmium, tungsten, gold, copper, zinc, and silver. Operating as a thermoelectric generator (40), electrical power may be drawn from the circulating electric current using either a vibrating mechanical switch (70), a Hall effect generator (140) or a Colpits oscillator (159).

IPC 1-7

H01L 35/04; **H01L 35/06**; **H01L 35/10**; **H01L 35/18**; **H01L 35/20**

IPC 8 full level

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CPC (source: EP KR)

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DOCDB simple family (application)

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