

# TRANSPORT PROPERTIES OF TERNARY INTERMETALLIC COMPOUNDS IN THE U-Ru-Si SYSTEM

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The research on thermoelectric properties of *f*-element based intermetallics has grown interest since the demonstration of possible high Seebeck coefficient in heavy fermion or spin-fluctuation compounds [1,2].

In this respect, the U-Ru-Si ternary compounds attract attention due to the interesting properties of (i) URu<sub>2</sub>Si<sub>2</sub> which is a well known heavy fermion superconductor [3] and (ii) RuSi (FeSi-type) which is a narrow-gap semiconductor [4] presenting a Seebeck coefficient of about 300 μV.K<sup>-1</sup> at room temperature [5].

Two new ternary compounds, namely Uru<sub>4</sub>Si<sub>4</sub> and URu<sub>5</sub>Si<sub>5</sub> seem promising for obtaining high thermopower as long as their quadratic structure can be described as an intergrowth of URu<sub>2</sub>Si<sub>2</sub> and Ru-Si layers [6].

The original crystal structure as well as the magnetic, electrical and thermoelectric properties of these two intermetallics will be presented and compared to behaviours of other U-based ternary silicides.

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[5] H. Hohl et al., *J. Alloys Compd.*, 278 (1998) 39.

[6]M. Pasturel et al., to be published.

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