

Thursday, September 29



Morning session  
Chairman S. Shastry

**8:30 A. Bentien**, Dresden, Germany,  
Synthesis strategies and materials for rare-earth containing thermoelectrics

**9:30 B. Büchner**, Dresden, Germany  
Magnon heat transport in low-dimensional cuprates

**10:30** coffee break

**11:00 H. Alloul**, Paris, France  
NMR studies of the Co charge states and the electronic properties of various cobaltate phases

Lunch & afternoon break

Afternoon session, Chairman P. Fazekas

**17:00 K. Schönhammer**, Göttingen, Germany  
Correlation effects in transport through quantum wires: a functional RG approach

**18:00 S. Maekawa**, Sendai, Japan  
Electronic and Transport Properties in Frustrated Correlated Lattices

After dinner talk

**21:00 G. D. Mahan**  
Is this workshop a waste of time?

Friday, September 30



Morning session  
Chairman E.V. Sampathkumaran

**8:30 L. Forró**, Lausanne, Switzerland  
Thermoelectric power of selected vanadium-based compounds

**9:30 N. P. Ong**, Princeton, USA  
Thermopower and Hall Effect in the bilayer and trilayer Na-doped cobaltate

**10:30** coffee break

**11:00 A. Migliori**, Los Alamos, USA  
A brief tutorial on the Nernst/Ettinghausen thermomagnetic effect

**15:00** ECOM MC+WG meeting

**16:00** Follow-up the conference on  
**Concepts in Electron Correlation**

**20:30** Farewell /Reception party



### Scope of the workshop

Recent achievements in condensed matter physics and chemistry have brought us to the point where the material properties can be tuned on the quantum mechanical level.

We are interested in the possibility of engineering the thermoelectric devices using the correlated electron systems close to the metal-insulator boundary. The thermoelectric workshop will focus on Kondo insulators, correlated semiconductors, skutterudites, and related heterostructures. It will review new materials and new mechanisms that could lead to thermoelectric devices with a useful figure-of-merit.

It is important for progress in this field to have a stimulating dialogue between chemists, metallurgists and physicists. The success is only likely to be achieved through a combination of techniques in a multi-front approach and the workshop will provide the opportunity to step back and look at the bigger picture.



# Workshop on Correlated Thermoelectric Materials

September 25th - 30th 2005  
Hvar, Croatia

web site

[hvar05.ifs.hr](http://hvar05.ifs.hr)

Directors:

**E. Bauer**, Vienna, Austria  
**J. Freericks**, Georgetown, USA  
**M. B. Maple**, San Diego, USA  
**P. Rogl**, Vienna, Austria  
**V. Zlatić**, Zagreb, Croatia



# Programme

## Sunday, September 25

---



Morning session  
Chairman J. Freericks

**8:15** Opening of the workshop  
V. Zlatić

**8:30 M. B. Maple**, San Diego, USA  
Strongly correlated electron phenomena in filled skutterudite compounds

**9:30 B. Sales**, Oak Ridge, USA  
An overview of the role of electron correlations in the thermoelectric performance of cobaltites, skutterudites, clathrates and rare-earth intermetallics

**10:30** coffee break

**11:00 S. Bühler-Paschen**, Vienna, Austria  
Towards strongly correlated thermoelectrics

Lunch & afternoon break

Afternoon session, Chairman A. Hewson

**16:00** Poster session+discussions (tea/coffee)

**17:00 S. B. Shastry**, Santa Cruz, USA  
Thermal Conductivity and Dynamical Thermal Transport Coefficients in Condensed Matter I

**18:00 J. Freericks**, Washington, D.C., USA  
Thermal transport in strongly correlated nanostructures

**20:30** After-dinner discussion

## Monday, September 26

---



Morning session  
Chairman M. B. Maple

**8:30 C. Godart**, Paris, France  
Thermoelectric and magnetic properties of double filled

$(\text{Ce}, \text{Yb})(\text{Fe}, \text{Co}, \text{Ni})_4\text{Sb}_{12}$

**9:30 J. Gómez Sal**, Santander, Spain  
Specific heat measurements, electrical resistivity and magnetocaloric effect in SCES compounds with high magnetic disorder

**10:30** coffee break

**11:00 A. Hewson**, London, UK  
A Renormalisation Group Approach to Fermi liquid Theory and Beyond

Lunch & afternoon break

Afternoon session, Chairman P. Rogl

**16:00** Poster session + discussions (tea/coffee)

**17:00 G. Mahan**, Pennsylvania, USA  
Solitons in Thermal Transport

**18:00 B. Dóra**, Budapest, Hungary  
Magnetothermopower and Nernst effect of Unconventional charge density waves

**20:30** After-dinner discussion

## Tuesday, September 27

---



Morning session  
Chairman B. Sales

**8:30 E. Bauer**, Wien, Austria  
Thermoelectric features and magnetic properties of skutterudites

$\text{Pr}(\text{Fe}, \text{Ni}, \text{Co})_4\text{Sb}_{12}$

**9:30 K. Behnia**, Paris, France  
Seebeck and Nernst coefficients of heavy-electron metals in the zero-temperature limit

**10:30** coffee break

**11:00 V. Pudalov**, Moscow, Russia  
Thermoelectric power of 2-dimensional electron systems in the vicinity of the metal-insulator transition

Lunch & afternoon break

Afternoon session, Chairwoman S. Bühler- Paschen

**16:00** Poster session + discussions (tea/coffee)

**17:00 S. B. Shastry**, Santa Cruz, USA  
Thermal Conductivity and Dynamical Thermal Transport Coefficients in Condensed Matter II

**18:00 V. Zlatić**, Zagreb, Croatia  
Thermoelectricity of Ce, Yb and Eu compounds

**20:30** Workshop dinner

## Wednesday, September 28

---

Morning session



Chairman E. Bauer

**8:30 J. Flouquet**, Grenoble, France  
Thermoelectricity of  $\text{URu}_2\text{Si}_2$ : giant Nernst effect in the hidden-order state

**9:30 A. Migliori**, Los Alamos, USA  
Elasticity of alpha-Pu: a window into fundamental understanding

**10:30** coffee break

**11:00 P. Rogl**, Vienna, Austria  
Clathrates - from hydrate clathrates to intermetallics with thermoelectric properties

Lunch & afternoon break

Afternoon session, Chairman K. Behnia

**16:00** Poster session+discussions (tea/coffee)

**17:00 G. Czycholl**, Bremen, Germany  
Thermoelectric properties of heavy fermion systems calculated within a DMFT/NRG treatment of the periodic Anderson model

**18:00 P. Fazekas**, Budapest, Hungary  
Multipolar ordering in f- and d-electron systems

**20:30** ECOM MC+WG meeting