





# Participant Profile

for the  
**Turkish-German Strategy Workshop 2006**  
**TÜBİTAK Marmara Research Center,**  
**Istanbul- Gebze Turkey**



International Bureau (IB)  
of the Federal Ministry of  
Education and Research  
(BMBF)

## Key publications:

1. Althues H, Simon P, Philipp F, Kaskel S. Integration of zinc oxide nanoparticles into transparent poly(butanediolmonoacrylate) via photopolymerisation. **J. Nanosci. Nanotechnol.** 2006; 6:409-413
2. Krawiec P, De Cola PL, Gläser R, Weitkamp J, Weidenthaler C, Kaskel S. Oxide foams for the synthesis of high-surface-area vanadium nitride catalysts. **Adv. Mater.** 2006; 18:505-508
3. Althues H, Palkovits R, Ruplecker A, Simon P, Sigle W, Bredol M, Kynast U, Kaskel S. Synthesis and Characterization of Transparent Luminescent ZnS:Mn/PMMA Nanocomposites. **Chem. Mater.** 2006; 18:1068-1072
4. Kaskel S, Chaplais G, Schlichte K. Synthesis, Characterization, and Catalytic Properties of High-Surface-Area Aluminum Silicon Nitride Based Materials. **Chem. Mater.** 2005; 17:181-185
5. Palkovits R, Althues H, Ruplecker A, Tesche B, Dreier A, Holle U, Fink G, Cheng CH, Shantz DF, Kaskel S. Polymerization of w/o-Microemulsions for the Preparation of Transparent SiO<sub>2</sub>/PMMA-Nanocomposites. **Langmuir** 2005; 21:6048-6053
6. Carr CS, Kaskel S, Shantz DF. Self-Assembly of Colloidal Zeolite Precursors into Extended Hierarchically Ordered Solids. **Chem. Mater.** 2004; 16:3139-3146
7. Krawiec P, Kaskel S. SiC/MCM-48 and SiC/SBA-15 Nanocomposite Materials. **Chem. Mater.** 2004; 16:2869-2880
8. Kaskel S, Schlichte K, Chaplais G, Khanna M. Synthesis and Characterization of Titanium Nitride Based Nanoparticles. **J. Mater. Chem.** 2003; 13:1496-1499
9. Bogdanovic B, Felderhoff M, Kaskel S, Pommerin A, Schlichte K, Schüth F. Improved Hydrogen Storage Properties of Ti-doped Sodium Alanate Using Nanoparticulate Titanium Doping Agents. **Adv. Mater.** 2003; 15:1012-1015
10. Althues H, Kaskel S. Sulfated Zirconia Nanoparticles synthesized in Reverse Microemulsions – Preparation and Catalytic Properties. **Langmuir** 2002; 18:7428-7435



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## 2. Past and present research collaborations

Are you familiar  
with the European  
Framework  
Programme?

Yes

No

- with Framework Programme 5  
 with Framework Programme 6  
 with Framework Programme 7

EU-projects you are  
involved in:

Past projects

**No. of Framework Programme / contract number / title / acronym / your  
function (coordinator / partner / contractor)**

Socrates 210377-IC-3-2002-1 /Advanced Physics and Chemistry of Materials

Present projects

Socrates / Physics and Chemistry of Multifunctional Materials

Other international  
collaborations:

D. Shantz (Texas A&M); V. Caps (CNRS Lyon); P. Llewellyn (CNRS Marseille)

Name(s) and  
contact details of  
potential partners:

**If you would like to suggest the participation of particular partners from the  
partner country based on existing contacts or collaboration experience,  
you are welcome to indicate their names and contact details below:**

## 3. Presentation at the Workshop

I will give a presentation at the workshop (approx. 10 min.) to present my institution, my expertise, and my collaboration interests. The contents of my presentations is summarised below (max. 1 page).

For the development of new catalysts, gas storage materials and functional components, the design of materials with high accessible surface area is crucial. Porous materials allow for the specific conversion or adsorption of molecules due to tailor-made pores. In recent years, new strategies for the pore size engineering of inorganic solids were developed such as micellar templating and nanocasting but also new materials such as inorganic nitrides were synthesized with pore sizes of 2-5 nm and high accessible surface area up to  $1000 \text{ m}^2\text{g}^{-1}$  using non-oxide sol-gel techniques. Nanostructured inorganic materials are also valuable functional components for the integration into polymer-based materials. Inorganic nanoparticles are invisible and thus allow for the generation of transparent hybrid materials with functions associated with the inorganic module but bulk properties resembling those of the matrix polymer.

**I agree with the publication of my data on the Workshop website!**

**PLEASE FILL IN THIS FORM UNTIL 15 SEPT. 2006 AND RETURN IT TO:**

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