

## Programm NUKLEAR / Program Nuclear Safety

### Veröffentlichungen des Jahres 2002 / Publications 2002

- Auger, T.; Aphecetche, L.; Cadiou, A.; Dai, Y.; Glasbrenner, H.; Gröschel, F.; Kirchner, T.  
*MEGAPIE target design and LiSoR experiment - status report.*  
Structural Materials for Hybrid Systems: A Challenge in Metallurgy, Paris, F, October 29-31, 2001  
Journal de Physique IV, Proceedings, 12(2002) S.Pr8/27-43
- Becker, U.; Risthaus, P.; Bosbach, D.; Putnis, A.  
*Selective attachment of monovalent background electrolyte ions and growth inhibitors to polar steps on sulfates as studied by molecular simulations and AFM observations.*  
Molecular Simulation, 28(2002) S.607-32
- Borgstedt, H.U.; Guminski, C.  
*IUPAC-NIST solubility data series. 75. Nonmetals in liquid alkali metals.*  
Journal of Physical and Chemical Reference Data, 30(2001) S.835-1158
- Dementjev, S.; Glasbrenner, H.; Kirchner, T.; Heinrich, F.; Bucenieks, I.; Platācis, E.; Pozdnjaks, A.; Krisko, S.; Kirshtein, G.; Mikoelov, A.  
*Liquid metal loop of the LiSoR experimental facility.*  
Magnetohydrodynamics, 37(2002) S.417-26
- Hering, W.; Homann, Ch.; Lamy, J.S.; Miassoedov, A.; Schanz, G.; Sepold, L.; Steinbrück, M.  
*Comparison and interpretation report of the OECD international standard problem no.45 exercise (QUENCH-06).*  
Wissenschaftliche Berichte, FZKA-6722 (Juli 2002)
- Hering, W.; Homann, C.; Miassoedov, A.; Steinbrück, M.  
*Specification of the international standard problem ISP-45 (QUENCH-06)*  
OECD/NEA/CSNI/R(2001)1 (Mai 2001)
- Knebel, J.U.; Müller, G.; Konys, J.; Kalla-Team  
*HGF strategy fund project 99/16: thermalhydraulic and material specific investigations into the realization of an accelerator driven system (ADS) to transmute minor actinides.*  
Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1  
Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.417-55
- Knebel, J.U.; Müller, G.; Konys, J.  
*Lead-bismuth activities at the Karlsruhe lead laboratory KALLA.*  
Proc. of the 10th Internat. Conf. on Nuclear Engineering (ICONE-10), Arlington, Va., April 14-18, 2002  
New York, N.Y. : ASME, 2002 CD-ROM Paper 22240

Konys, J.; Ehrlich, K.; Leistikow, S.

*Water chemistry of BWR's, PWR's and supercritical fossil fuel power plants.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.301-10

Krauss, W.; Schanz, G.; Steiner, H.

*B<sub>4</sub>C oxidation tests in TG (thermal balance).*

8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Krauss, W.; Schanz, G.; Steiner, H.

*Basic B<sub>4</sub>C oxidation tests in the thermal balance with respect to reaction kinetics under severe accident conditions.*

7th Internat. Quench Workshop, Karlsruhe, December 12-14, 2001

Krauss, W.; Schanz, G.; Steiner, H.; Heck, M.

*Einzeleffekt-Untersuchungen zur B<sub>4</sub>C-Oxidation und ihrer modellmäßigen Beschreibung.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.160-67

Miassoedov, A.; Homann, C.; Schanz, G.; Sepold, L.; Steinbrück, M.

*Bundle experiments on the determination of hydrogen source term. Status of the QUENCH program.*

Spring Meeting of the Cooperative Accident Research Program (CSARP), Albuquerque, N.M., May 6-8, 2002

Miassoedov, A.; Stuckert, J.; Steinbock, L.; Steinbrück, M.

*QUENCH behaviour of the zircaloy fuel rod cladding tubes.*

Internat. Conf. Nuclear Energy for New Europe 2002, Kranjska Gora, SLO, September 9-12, 2002

Miassoedov, A.; Hering, W.; Homann, C.; Leiling, W.; Piel, D.; Schmidt, L.; Sepold, L.; Steinbrück, M.

*Results of the QUENCH-05 experiment on the investigation of cooldown behaviour of overheated PWR fuel rod simulators.*

Jahrestagung Kerntechnik 2002, Stuttgart, 14.-16.Mai 2002

Bonn : INFORUM GmbH, 2002 S.153-56

Miassoedov, A.; Piel, D.; Sepold, L.; Steinbrück, M.; Steinbock, L.; Stegmaier, U.

*Results of the QUENCH-07 bundle experiments on the investigation of cool-down behaviour of overheated PWR fuel rod simulators (QUENCH-Programme).*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1  
Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.139-45

Miassoedov, A.; Homann, C.; Sepold, L.; Steinbrück, M.

*Results of the QUENCH-07 experiment.*

Proc. of the 10th Internat. Conf. on Nuclear Engineering (ICONE-10), Arlington, Va., April 14-18, 2002

New York, N.Y. : ASME, 2002 CD-ROM Paper 22137

Müller, G.; Heinzl, A.; Weisenburger, A.; Konys, J.; Wedemeyer, O.; Rusanov, A. ; Markov, V.

*Liquid metal corrosion.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1  
Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.384-96

Müller, G.; Heinzl, A.; Konys, J.; Schumacher, G.; Weisenburger, A.; Zimmermann, F.; Engelko, V.; Rusanov, A.; Markov, V.

*Results of steel corrosion tests in flowing liquid Pb/Bi at 420-600°C after 2000 h.*

Proc. of the 2nd Internat. Topical Workshop on Materials for Hybrid Reactors and Related Technologies, Brasimone, I, April 18-20, 2001

Journal of Nuclear Materials, 301(2002) S.40-46

Norajitra, P.; Piel, D.; Sepold, L.

*Instrumentierung für CABRI-Testeinsätze.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1  
Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.261

Schanz, G.; Stegmaier, U.

*Metallographic post-test examination of the QUENCH-04 and QUENCH-05 test bundles.*

7th Internat. QUENCH Workshop, Karlsruhe, December 12-14, 2001

Schanz, G.; Heck, M.; Stegmaier, U.

*Metallographic post-test examination of QUENCH-04 and QUENCH-05 test bundles and phenomenological interpretation.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1  
Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.146-50

Schanz, G.; Stegmaier, U.; Heck, M.

*Results of metallographic post-test examination of the QUENCH-07 bundle.*

8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Sepold, L.; Homann, C.; Leiling, W.; Miassoedov, A.; Piel, D.; Schanz, G.; Schmidt, L.; Stegmaier, U.; Steinbrück, M.; Steiner, H.

*Experimental and calculational results of the QUENCH-05 test.*

Wissenschaftliche Berichte, FZKA-6615 (Juni 2002)

Sepold, L.; Hofmann, P.; Homann, C.; Leiling, W.; Miassoedov, A.; Piel, D.; Schanz, G.; Schmidt, L.; Stegmaier, U.; Steinbrück, M.; Steiner, H.; Palagin, A.V.; Boldyrev, A.V.; Berdyshev, A.V.; Shestak, V.E.; Veshchunov, M.S.

*Investigation of an overheated PWR-type fuel rod simulator bundle cooled down by steam.*

*Part I: Experimental and calculational results of the QUENCH-04 test.*

*Part II: Application of the SVECHA/QUENCH code to the analysis of the QUENCH-01 and QUENCH-04 bundle tests.*

Wissenschaftliche Berichte, FZKA-6412 (April 2002)

Song, T.Y.; Park, W.S.; Müller, G.; Heinzel, A.; Konys, J.

*Stagnant Pb-Bi corrosion experiment for hyper materials.*

7th Information Exchange Meeting on Partitioning and Transmutation, Jeju, Korea, October 14-16, 2002

Steinbrück, M.; Meier, A.; Stegmaier, U.; Steinbock, L.; Stuckert, J.

*B<sub>4</sub>C oxidation at high temperatures. BOX test results.*

8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Steinbrück, M.; Meier, A.; Stegmaier, U.; Steinbock, L.; Stuckert, J.

*Degradation and oxidation of B<sub>4</sub>C control rod segments at high temperatures.*

Status report. 8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Steinbrück, M.; Meier, A.; Stegmaier, U.; Steinbock, L.; Stuckert, J.

*Degradation of B<sub>4</sub>C control rod segments.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.157-59

Steinbrück, M.; Meier, A.; Stegmaier, U.; Steinbock, L.; Stuckert, J.

*Oxidation kinetics of B<sub>4</sub>C (BOX rig experiments).*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.151-56

Steinbrück, M.; Meier, A.; Stegmaier, U.; Steinbock, L.; Stuckert, J.; Krauss, W.; Schanz, G.; Steiner, H.

*Separate-effects tests within the scope of the QUENCH program at FZK.*

Spring Meeting of the Cooperative Accident Research Program (CSARP), Albuquerque, N.M., May 6-8, 2002

Steiner, H.; Steinbrück, M.

*Modelling of boron carbide oxidation and boric acid formation.*

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.168-74

Steiner, H.

*Modelling of boron carbide oxidation and boric acid formation.*

8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Steiner, H.

*Stress effects in cylindrical tubes of austenitic and ferritic/martensitic steels with oxide scales.*

*Materials selection for a HPLWR.*

Wissenschaftliche Berichte, FZKA-6737 (November 2002)

Stuckert, J.; Steinbrück, M.; Stegmaier, U.; Palagin, A.

Cool-down tests in various atmospheres on the thermal and thermomechanical behaviour of Zircaloy-4 cladding.

Programm Nukleare Sicherheitsforschung. Jahresbericht 2001. Teil 1

Wissenschaftliche Berichte, FZKA-6741 (Juni 2002) S.175-80

Stuckert, J.; Stegmaier, U.

Degradation of the cladding oxide layer under steam starvation conditions.

8th Internat. Quench Workshop, Karlsruhe, October 29-31, 2002

Stuckert, J.; Steinbrück, M.; Stegmaier, U.; Palagin, A.V.

*On the thermo-physical properties of zircaloy-4 and ZrO<sub>2</sub> at high temperatures.*

*Part 1: Experimental and modelling results on cool-down of zircaloy-4 rods in various atmospheres. thermal and thermo-mechanical effects.*

*Part 2: Determination of zircaloy and ZrO<sub>2</sub> emissivities using experimental data of empty rods cool-down tests.*

Wissenschaftliche Berichte, FZKA-6739 (Oktober 2002)

Stuckert, J.; Miassoedov, A.; Hayward, P.J.; Hofmann, P.; Veshchunov, M.

*ZrO<sub>2</sub> and UO<sub>2</sub> dissolution by molten zircaloy.*

Internat. Conf. Nuclear Energy for New Europe 2002, Kranjska Gora, SLO, September 9-12, 2002

Veshchunov, M.S.; Stuckert, J.; Berdyshev, A.V.

*Modelling of Zr-O and U-Zr-O melts oxidation and new crucible tests.*

Wissenschaftliche Berichte, FZKA-6792 (Dezember 2002)

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