

Institute for Superconducting and Electronic Materials

2001 Refereed Publications

HTS Program

J.H. Ahn, H.K. Liu and S.X. Dou, "Effects of oxygen partial pressure on processing conditions and phase transformation in Ag/Bi-2223 tapes" *Physica C* **351**, 371-378 (2001)

E. Babic, I. Kusevic, D. Marinaro, S.X. Dou, J. Boldeman and R. Weinstein, "Vortex pinning by fission tracks in ²³⁵U-doped Ag/Bi-2223 tapes", *Solid State Commun.* **118**, 607-610 (2001)

E. Babic, I. Kusevic, D. Marinaro and S.X. Dou, "Critical currents and vortex pinning in ²³⁵U doped Ag/Bi2223 tapes irradiated with thermal neutrons" *Fizika A* **10** 155-168 (2001)

E. Babic, D. Miljanic, K. Zadro, I. Kusevic, Z. Marohnic, D. Drobac, X.L. Wang and S.X. Dou "Enhancement of flux pinning in neutron irradiated MgB₂ superconductor" *Fizika A* **10** 87-94 (2001)

E.H. Brandt "Geometric edge barrier in the Shubnikov phase of type II superconductors" *LowTemp. Physics* **27**, No 9-10 980-990 (2001)

C. Cai, H. Mori, H. Fujimoto, H.K. Liu and S.X. Dou, "Crystal growth patterns in MgO seeded Y_{1.8}Ba_{2.4}Cu_{3.4}O_y/Ag melt-texturing process" *Physica C* **357-360**, 734-737 (2001)

C. Cai, M. Tachiki, T. Jujii, T. Kobayashi, H.K. Liu and S.X. Dou, "Optimized NdBa₂Cu₃O_y thin films deposited by eclipsed pulsed laser ablation", *Physica C* **356**, 205-211 (2001).

W.M. Chen, Y.C. Guo, X.K. Fu, H.K. Liu, S.X. Dou and M. Apperley, "Comparative studies on "sandwich" rolling and flat rolling in processing Ag/Bi-2223 tapes" *IEEE Trans. Appl. Supercond.* **11**, **1**, 3752-3755 (2001)

W.M. Chen, Y.C. Guo, G. McCaughey, M. Apperley, H.K. Liu and S.X. Dou, "Effect of various mechanical deformation techniques on critical current densities of Ag/Bi-2223 tapes" *Physica C*, **354**, 349-352 (2001)

W.M. Chen, F. Wang, S.S. Jiang, H.K. Liu and S.X. Dou "Upper critical field H_{c2} on c axis of Ag/Bi-2223 polycrystal tape" *J. Supercon.* **14**, **4**, 463-466 (2001)

W.M. Chen, D.Q. Shi, X.K. Fu, H.K. Liu, T. Silver and S.X. Dou "Effect of various intermediate deformation techniques on J_{vc} and grain texture for Ab/Bi-2223 tapes" *J. Supercon.* **14**, **4**, 537-541 (2001)

H.T. Cooper, W. Gao, S. Li, H.K. Liu and S.X. Dou, "Intrinsic deformation behaviour in pressed Bi-Sr-Ca-Cu-O Tapes" *Supercond. Sci and Tech.*, **14**, 862-869 (2001)

H. Cooper, S. Li, W. Gao, H.K. Liu and S.X. Dou, "Phase transformation characteristics of BSCCO tapes processed via cryogenic and room temperature pressing" *Supercond. Sci and Tech.*, **14**, 533-538 (2001)

S.X. Dou, X.L. Wang, J. Horvat, D. Milliken, A.H. Li, K. Konstantinov, E.W. Collings, M.D. Sumption and H.K. Liu "Flux jumping and a bulk-to-granular transition in the magnetization of a compacted and sintered MgB₂ superconductor" *Physica C* **361**, 79-83 (2001)

X.K. Fu, Y.C. Guo, W.M. Chen, H.K. Liu and S.X. Dou "Effect of the sinter-forging deformation rate on properties of Bi-2223 current leads" *IEEE Trans. Appl. Supercond.* **11**, **1**, 2551-2554 (2001)

F. Gao, R.A. Lewis, X.L. Wang and S.X. Dou, "Phonon Modes of A(Co_{1/2})O₃(A = La, Nd, Dy, Ho, Yb)" *J. Solid State Chemistry* **160**, 350-352 (2001)

F. Gao, X.L. Wang, R.A. Lewis, P. Mikheenko, S.X. Dou "Synthesis and magnetic properties of perovskite La_{1-x}Ca_xMn_{0.9}Li_{0.1}O₃" *J. Alloys & Compounds* **325**, 281-284 (2001)

Y.C. Guo, W.M. Chen, H.K. Liu, S.X. Dou and A. V. Lukashenko, "Improved uniformity of microstructure and electrical properties of Bi-2223/Ag superconducting tapes" *Physica C*, **355**, 163-171 (2001)

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- A. Li, X.L. Wang, M. Ionescu, S. Soltanian, J. Horvat, T. Silver, H.K. Liu and S.X. Dou "Fast formation and superconductivity of MgB₂ thick films grown on stainless steel substrate" *Physica C* **361**, 73-78 (2001)
- S. Li, W. Gao, H. Cooper, H.K. Liu and S.X. Dou, "The effect of mechanical deformation on the phase transformation of BSCCo superconductors" *Physica C*, 356, **197-204** (2001)
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- D. Marinaro, S.X. Dou, J. Horvat, J. Boldeman, R. Weinstein and R. Sawh, "Effect of uranium doping and thermal neutron irradiation on the flux-pinning of silver-clad Bi-Sr-Ca-Cu-O tapes," *IEEE Trans. Appl. Supercond.* **11**, 1, 3896-3899 (2001)
- D. Milliken, J.H. Ahn and S.X. Dou "Microstructural variations with uranium compound doping of Bi-Sr-Ca-Cu-O/Ag superconducting tapes" *IEEE Trans. Appl. Supercond.* **11**, 1, 3964-3967 (2001)
- D. Milliken, J.H. Ahn and S.X. Dou, "Phase formation and thermal treatment optimisation in uranium compound doped (Bi,Pb)₂Sr₂Ca₂Cu₃O_x/silver superconducting tapes" *Physica C*, **354**, 183-188 (2001)
- V.M. Pan and A.V. Pan, "Vortex matter in superconductors" *Low Temp. Physics*, **27**, 9-10, 732-746 (2001)
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X.L. Wang, H.K. Liu and S.X. Dou, "Study of the peak effect in pure, Pb and Pb + Y doped Bi-2212 single crystals" *Physica C* **364-365**, 622-625 (2001)

X.L. Wang, H.K. Liu, S.X. Dou, J. Horvat, D. Milliken, G. Heine, W. Lang, H.M. Luo and S.Y. Ding, "Superconductivity and flux pinning in Y and heavily Pb codoped Bi-2212 single crystals" *J. of App. Physics*, **89**, **11B**, 7699-7671 (2001)

X.L. Wang, S. Sontanian, J. Horvat, A.H. Li, M.J. Qin, H.K. Liu and S.X. Dou, "Very fast formation of superconducting MgB_2/Fe wires with high J_c " *Physica C* **361**, 149-155 (2001)

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Battery Program

J.H. Ahn, G.X. Wang, H.K. Liu and S.X. Dou "Mechanically milled nanocrystalline Ni_3Sn_4 and FeSi_2 alloys as an anode material for Li-ion batteries" *Materials Science Forum* **360-362**, 595-602 (2001)

J. Wang, S. Zhong, G.X. Wang, D.H. Bradhurst, M. Ionescu, H.K. Liu and S.X. Dou, "Electrochemical performance of nanocrystalline lead oxide in VRLA batteries" *J. Alloys & Compounds* **327**, 141-145 (2001)

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R.L. Causley and R.A. Lewis, "Far-infrared spectroscopy of the zinc acceptor in indium phosphide" *Physica B* **302-303**, 327-333 (2001)

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W. Xu and C. Zhang "Dynamical Franz-Keldysh effect of an electron gas in high magnetic fields and intense laser fields" *Physica B* **298**, 339-343 (2001)

C. Zhang "Electronic states and dielectric response of an electron gas under a quantizing magnetic field and an intense laser" *Computer Phys. Commun.* **142**, 374-381 (2001)

C. Zhang "Resonant tunnelling and bistability in a double barrier structure under an intense terahertz laser" *App. Physics Lett.* **78**, **26**, 4187-4189 (2001)

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Non-Refereed Conference Papers

G. Gumbs, C. Zhang and R.E.M. Vickers, "Transport in quantum-dot lattices in a periodic magnetic field" *Proc. 25th Int. Conf. Phys. Semicon.*, Osaka 17-22/9/2000, 1403-1404 (2001)

P.C. Jobe Prabakar, P. Fisher and R.E.M. Vickers "Zeeman and Piezospectroscopy of some axial defects in germanium" *Proc. 25th Int. Conf. Phys. Semicon.*, Osaka 17-22/9/2000, 1095-1096 (2001)