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Recent Publications

1. A. Sandhu, Y. Kumagai, A. Lapicki, S. Sakamoto, M. Abe, H. Handa: High efficiency Hall effect micro-biosensor platform fordetection of magnetically labeled biomolecules, Biosens. Bioelectron., **22**, 2115–2120 (2007).
2. A. Lapicki, F. Sakamoto, A. Sandhu: Monitoring DNA Hybridization by Quantification of Nitrogen Content Using X-Ray Photoelectron Spectroscopy, Jpn. J. Appl. Phys., **46**, L49-L52 (2007).
3. Y. Kumagai, K.Togawa, S. Sakamoto, M. Abe, H. Handa, A. Sandhu: Hall biosensor with integrated current microstrips for control of magnetic beads, IEEE Trans. Magn., **42**, 3893-3895 (2006).
4. K. Togawa, H. Sanbonsugi, A. Sandhu, M. Abe, H. Narimatsu, K. Nishio, H. Handa: Detection of magnetically labeled DNA using pseudomorphic AlGaAs/InGaAs/GaAs heterostructure micro-Hall biosensors, Jpn. J. Appl. Phys., **99**, 08P103-08P105 (2006).
5. A. Lapicki, H. Sanbonsugi, T Yamamura, N. Matsuhita, M. Abe, H. Narimatsu, H. Handa, A. Sandhu: Funtionalization of micro-Hall effect sensors for biomedical applications utilizing superparamagnetic beads, IEEE Trans. Magn., **41**, 4134-4136 (2005).
6. A. Sandhu, H. Handa: Practical Hall Ssensors for Biomedical Iinstumentation, IEEE Trans. Magn., **41**, 4123-4126 (2005).
7. K. Togawa, H. Sanbonsugi, A. Sandhu, M. Abe, H. Narimatsu, K. Nishio, H. Handa: High sensiticvity InSb Hall effect biosensor platform for DNA detection and biomolecular recognition using functionalized magnetic nanobeads, Jpn. J. Appl. Phys., **44**, L1494-L1497 (2005).
8. *A. Sandhu, H. Sanbonsugi, I. Shibasaki, M. Abe, H. Handa: High sensitivity InSb ultra-thin film micro-Hall sensors for bioscreening applications, Jpn. J. Appl. Phys., **43**, L868-L870 (2004).
9. T. Ohashi, H. Osawa, A. Sandhu: Contact Mode Scanning Hall Probe Microscopy, IEEE Trans. Magn., in press (2008).
10. Z. Primadani, H. Osawa, A. Sandhu, High temperature scanning Hall probe microscopy using AlGaN/GaN two dimensional electron gas micro-Hall probes, J. Appl. Phys., **101**, 09K105 (2007).
11. Z. Primadania, A. Sandhu: Variable temperature scanning Hall probe microscopy of ferromagnetic garnet thin films, J. Magn. Magn. Mater., **310**, 2693–2695 (2007).
12. T. Yamamura, D. Nakamura, M. Higashiwaki, T. Matsui, A. Sandhu: High sensitivity and quantitative magnetic field measurements at 600°C, J. Appl. Phys., **99**, 08B302 (2006).
13. A. Sandhu, H. Masuda, H. Senoguchi, K. Togawa: A novel variable temperature scanning nano-Hall probe microscope system for large area magnetic imaging incorporating piezoelectric actuators maintained at room temperature, Nanotechnology, **15**, S410–S413, (2004).