

## List of publications

### Books & chapters

1. C. Persson, R. Chen, H. Zhao, Mukesh Kumar, and D. Huang, “Electronic structure and optical properties from first-principles modeling, Book chapter in “Copper zinc tin sulphide-based thin film solar cells”, ed by K. Ito (John Wiley & Sons); 2014 (in print).

### Scientific articles

21. M. Kumar, G. Baldissera, C. Persson, D.G.F. David, M.V.S. da Silva, J.A. Freitas, Jr., J.G. Tischler, J.F.D. Chubaci, M. Matsuoka, A. Ferreira da Silva “Bulk Properties of InN Films determined by experiments and theory”, *Jr. Crystal Growth* (2014) accepted.
20. Mukesh Kumar, C. Persson, “Cu(Sb,Bi)(S,Se)<sub>2</sub> as indium-free absorber material with high optical efficiency”, *Energy Procedia*, in print (2014).
19. Mukesh Kumar, C. Persson, “Cu<sub>3</sub>BiS<sub>3</sub> as a potential photovoltaic absorber with high optical efficiency”, *Applied Physics Letter*. 102, 062109 (2013).
18. Mukesh Kumar, C. Persson, “CuSbS<sub>2</sub> and CuBiS<sub>2</sub> as potential absorber materials for thin-film solar cells”, *Jr. Renewable and Sustainable Energy* 5, 031616 (2013).
17. Mukesh Kumar, H. Zhao, C. Persson, “Cation vacancies in the alloy compounds of Cu<sub>2</sub>ZnSn(S<sub>1-x</sub>Se<sub>x</sub>)<sub>4</sub> and CuIn(S<sub>1-x</sub>Se<sub>x</sub>)<sub>2</sub>”, *Thin Solid Films* 535, 318-321 (2013).
16. Mukesh Kumar, C. Persson, “Electronic and optical properties of silver delafossite oxides: a first-principles study with hybrid functional”, *Physica B: Condensed Matter* 422, 20-27 (2013).
15. Mukesh Kumar, H. Zhao, C. Persson, “Study of band-structure, optical properties, and native defects in A<sup>I</sup>B<sup>III</sup>O<sub>2</sub> (A<sup>I</sup> = Cu or Ag, B<sup>III</sup> = Al, Ga or In) delafossites” *Semiconductor Science and Technology* 28, 065003 (2013).
14. Mukesh Kumar, C. Persson, “Cu<sub>2</sub>ZnSnS<sub>4</sub> and Cu<sub>2</sub>ZnSnS<sub>4</sub> as potential earth-abundant thin-film absorber materials: a density functional theory study”, *International Journal of Theoretical and Applied Sciences*. 5, 1 (2013).
13. H. Zhao, Mukesh Kumar and C. Persson, “Density functional theory study of ordered defect Cu-(In,Ga)-Se compounds”, *Physica Status Solidi C* 9 (7), 1600-1603 (2012).
12. Mukesh Kumar, J. Bijwe, “Influence of different types of binder in non-asbestos-organic brake lining materials: a case study on inertia brake dynamometer”, *J. Engineering Tribology* 2014 (in print).
11. S. Sharma, J. Bijwe, Mukesh Kumar, “Comparison between nano- and micro-sized copper particles as fillers in NAO friction materials”, *Nanomaterials and Nanotechnology*, 3 (2013) 12:2013.
10. Mukesh Kumar, J. Bijwe, “Optimized selection of metallic fillers for best combination of performance properties of friction materials: a comprehensive study”, *Wear* 303 (2013) 569 – 583.
9. Mukesh Kumar, X. Boidin, Y. Desplanques, J. Bijwe, “Influence of various metallic fillers in friction materials on hot-spot appearance during stop braking”, *Wear*, 270 (2011) 371 – 381.
8. Mukesh Kumar, J. Bijwe, “Composite Friction Materials Based on Metallic Fillers: Sensitivity of  $\mu$  to Operating Variables” *Tribology. International*, 44 (2011) 106 – 114.
7. Mukesh Kumar, J. Bijwe, “Non-asbestos organic (NAO) friction composites: role of copper; its shape and amount”, *Wear*, 270 (2011) 269 – 280.

6. Mukesh Kumar, J. Bijwe, “Studies on reduced scale tribometer to investigate the effects of metal additives on friction coefficient - temperature sensitivity in brake materials”, *Wear*, 269 (2010) 838 – 846.
5. Mukesh Kumar, J. Bijwe, “NAO Friction Materials with Various Metal Powders: Tribological evaluation on full scale inertia dynamometer”, *Wear*, 269 (2010) 826 – 837.
4. Mukesh Kumar, J. Bijwe, “Role of Different Metallic Fillers in Non-Asbestos Organic (NAO) Friction Composites for Sensitivity of  $\mu$  to Load and Speed”, *Tribology. International*, 43 (2010) 965–974.
3. D. K. Kolluri, X. Boidin, Y. Desplanques, G. Degallaix, Mukesh Kumar, J. Bijwe, “Effect of natural graphite particle size in friction materials on thermal localization phenomenon during stop braking”, *Wear*, 268 (2010) 1472 - 1482.
2. J. Bijwe, Mukesh Kumar, P. V Gurunath, Y. Desplanques, G. Degallaix, “Optimization of brass contents for best combination of tribo-performance and thermal conductivity of non-asbestos organic (NAO) friction composites”, *Wear*, 265 (2008) 699-712.
1. J. Bijwe, Mukesh Kumar “Optimization of steel wool contents in non-asbestos organic (nao) friction composites for best combination of thermal conductivity and tribo-performance”, *Wear* 263 (2007) 1243–1248.

**Conference/Symposia/workshop (some are in proceedings after peer review)**

12. Mukesh Kumar , C. Persson, “CuSbS<sub>2</sub> and Cu<sub>3</sub>SbS<sub>3</sub> as potential absorber materials for thin-film solar cells: a hybrid functional study” presented in *E-MRS Spring Meeting* Strasbourg, France, May 2013.
11. Mukesh Kumar, C. Persson, “Ternary Cu<sub>3</sub>BiY<sub>3</sub> (Y = S, Se, and Te) for Thin-Film Solar Cells. MRS Proceedings, 1538, pp 235-240 (2013).
10. Mukesh Kumar, C. Persson, “CuSbS<sub>2</sub> and CuBiS<sub>2</sub> as potential absorber materials for thin-film solar cells: a first-principles study” presented in *Int. Conf. of Solar Energy Photovoltaic*, Bhubaneswar, India, Dec 2012
9. Mukesh Kumar, H. Zhao, C. Persson, “Native defects in the alloy compounds of CuIn(S<sub>x</sub>Se<sub>1-x</sub>)<sub>2</sub> and Cu<sub>2</sub>ZnSn(S<sub>x</sub>Se<sub>1-x</sub>)<sub>4</sub>” presented in *E-MRS* Strasbourg, France, May 2012.
8. H. Zhao, Mukesh Kumar, C. Persson, “Theoretical modeling of Cu-X-(S,Se) solar cell absorbers, Con. Proc. of 16<sup>th</sup> *Semiconduct. and Insulat. Mater. Conf. (SIMC-16)* Stockholm, Sweden, July 2011.
7. Mukesh Kumar, S. Sharma, J. Bijwe, “On the role of nano-sized copper powder in friction material for automotive brake applications”, presented in 18<sup>th</sup> international conference on *Wear of Materials (WOM-11)*, Philadelphia, USA – April 3-7, 2011.
6. J. Bijwe, Mukesh Kumar “On the role of metallic fillers in NAO friction materials”, Proc. of 3rd international workshop on *Advances in Asbestos free Friction Composites (IWAAFC III)*, Indian Institute of Technology Delhi, India, Feb 9-10, 2011, pp. 1-8.
5. Mukesh Kumar, X. Boidin, Y. Desplanques, J. Bijwe, “Investigation on the role of metallic fillers in brake friction materials for counterface friendliness”, Conf. Proc. of 6<sup>th</sup> *European Conference on Braking (JEF)*, Nov 23 – 24, 2010, Lille, France. pp. 87-92.
4. Mukesh Kumar, S. Malliak, J. Bijwe, “Volvo bus disc brake testing on a brake inertia dynamometer”, Conf. Proc. of national conference on *Tribology of Automotive systems*, IIT Delhi, India, December 11-12, 2009, pp. 54-57.

3. Mukesh Kumar and J. Bijwe, “Influence of brass as a filler on load-speed sensitivity of polymer based friction composites”, Conf. Proc. of *Recent Advances in Innovative Materials (RIAM-08)*, NIT Hamirpur, HP, India, February 17-18, 2008, pp. 187-193.
2. Mukesh Kumar, J. Bijwe, “Role of different metallic Fillers in non-asbestos organic (NAO) friction composites for sensitivity of  $\mu$  to load and speed” Conf. Proc. of 2<sup>nd</sup> international conference on *Advanced Tribology (iCAT-08)* Singapore, December 3-5, 2008, pp. 473- 475.
1. J. Bijwe, Mukesh Kumar “Optimization of steel wool contents in non-asbestos organic (NAO) friction composites for best combination of thermal conductivity and tribo-performance”, presented in 16<sup>th</sup> international conference on *Wear of Materials (WOM-07)* Montreal, Canada, April 15-19, 2007, pp. 13D.3

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