

Advances in oxide materials: Preparation, properties, performance – The Summer School [ESB 1001 UCSB]		
Computational tools for functional oxide materials: An introduction for experimentalists		
Monday 25 <sup>th</sup> August Morning		
9:00 am to 10:30 am	Ram Seshadri	Crystal structures and electron counts
10:30 am to 11:00 am	Coffee Break	
11:00 am to 12:30 pm	Matt Rosseinsky	Some properties of crystals
Monday 25 <sup>th</sup> August Afternoon [Lunch at the de la Guerra Dining Commons]		
2:00 pm to 3:30 pm	David J. Singh	Magnetic materials and magnetic exchange interactions from first principles
3:30 pm to 4:00 pm	Coffee Break	
4:00 pm to 5:30 pm	Nicole Benedek	Ferroelectrics
Tuesday 26 <sup>th</sup> August Morning		
9:00 am to 10:30 am	Nicole Benedek	Exploring phase transitions from first principles
10:30 am to 11:00 am	Coffee Break	
11:00 am to 12:30 pm	James Rondinelli	Simulating strain effects and coupled electron-lattice interactions
Tuesday 26 <sup>th</sup> afternoon: Barbecue at Goleta Beach		
Wednesday 27 <sup>th</sup> August Morning		
9:00 am to 10:30 am	David J. Singh	Introduction to DFT, LAPW, and plane wave methods
10:30 am to 11:00 am	Coffee Break	
11:00 am to 12:30 pm	James Rondinelli	Computational tools for correlated and functional oxide discovery
Wednesday 27 <sup>th</sup> August Afternoon: Lunch at the de la Guerra Dining Commons, followed by the Workshop at 2:00 pm		
<b>Supported by:</b> International Center for Materials Research at UCSB, the Materials Research Laboratory: An NSF MRSEC, EPSRC Programme Grant "Chemical Synthesis of Transformative Extended Materials" at the University of Liverpool, and APL Materials (American Institute of Physics).		

**Advances in oxide materials: Preparation, properties, performance – The Workshop [ESB 1001 UCSB]**

Wednesday 27<sup>th</sup> August Afternoon

2:00 pm to 2:30 pm	Analytis, James	A new spin-anisotropic harmonic honeycomb iridate
2:30 pm to 3:00 pm	Attfield, Paul	Orbital molecules in electronic oxides
3:00 pm to 3:30 pm	Woodward, Patrick M.	Synthesis and magnetic properties of osmate double perovskites
3:30 pm to 4:00 pm	Coffee Break	
4:00 pm to 4:30 pm	Benedek, Nicole	Ferroelectrics to fuel cells: In search of design principles for the ionic transport properties of complex oxides
4:30 pm to 5:00 pm	Cheetham, Anthony K.	Recent developments in oxide phosphors for solid state lighting
5:00 pm to 5:30 pm	Dawber, Matthew	Engineering new properties in ferroelectric oxide superlattices
5:30 pm to 6:00 pm	Schlom, Darrell	An interface engineering approach to room temperature magnetoelectric multiferroics in ferrite superlattices

Thursday 28<sup>th</sup> August Morning

9:00 am to 9:30 am	Driscoll, Judith	Strongly enhanced functionalities at vertical interfaces formed by self assembly in epitaxial nanocomposite films
9:30 am to 10:00 am	Jackeli, George	Magnetic order and excitations in insulating iridates
10:00 am to 10:30 am	Seshadri, Ram	Data-driven approaches to oxide thermoelectrics
10:30 am to 11:00 am	Coffee Break	
11:00 am to 11:30 am	Leighton, Chris	Complex magnetotransport phenomena in ultra-thin film $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_{3-\delta}$ on $\text{SrTiO}_3$
11:30 am to 12:00 noon	Levy, Jeremy	Nanoscale phenomena in oxide heterostructures
12:00 noon to 12:30 pm	Mandrus, David	Doping and ultrasound studies of the structural phase transition in $\text{EuTiO}_3$

Thursday 28<sup>th</sup> August Afternoon [Lunch at the de la Guerra Dining Commons]

2:00 pm to 2:30 pm	Mitchell, John	$\text{Sr}_2\text{IrO}_4$ : A gateway to cuprate superconductivity ?
2:30 pm to 3:00 pm	Ramesh, Ramamoorthy	E-field control of magnetism using multiferroics
3:00 pm to 3:30 pm	Rjinders, Guus	Engineering functional properties in epitaxial oxide heterostructures
3:30 pm to 4:00 pm	Coffee Break	
4:00 pm to 4:30 pm	Rondinelli, James	Designing unusual phases in complex oxides using the versatile abilities of lattice instabilities
4:30 pm to 5:00 pm	Rosseinsky, Matthew	Computationally assisted identification of functional inorganic materials
5:00 pm to 5:30 pm	Hiroi, Zenji	Metal-insulator transitions in transition metal oxides
5:30 pm to 6:00 pm	Shimakawa, Yuichi	Multiple magnetic interactions in ordered perovskite-structure oxides

Friday 29<sup>th</sup> August Morning

9:00 am to 9:30 am	Sinclair, Derek	Fast ion conduction in $(\text{Na}_{1/2}\text{Bi}_{1/2})\text{TiO}_3$
9:30 am to 10:00 am	Singh, David J.	Tunability of the electronic and optical properties of stannate perovskites and their heterostructures
10:00 am to 10:30 am	Lanzara, Alessandra	Non equilibrium momentum dependent dynamics of high temperature superconductors
10:30 am to 11:00 am	Coffee Break	
11:00 am to 11:30 am	Stemmer, Susanne	Controlling strong electron correlations with oxide heterostructures
11:30 am to 12:00 noon	Subramanian, M. A.	New pigments based on transition metal oxides
12:00 noon to 12:30 pm	Takano, Mikio	Little-known Fe-oxides: Bacterial oxides and ozonized oxides

Friday 29<sup>th</sup> August Afternoon [Lunch at the de la Guerra Dining Commons]

2:00 pm to 2:30 pm	Wiebe, Chris	The role of broken symmetry in the multiferroic dugganites $\text{A}_3\text{TeX}_3\text{Z}_2\text{O}_{14}$ (A = Ba, Pb, K; X = Co, Mn, Fe; Z = V, P)
2:30 pm to 3:00 pm	Wilson, Stephen	Exploring the magnetic ground state of a hyper-Kagome lattice of $J=1/2$ moments in a correlated iridate
3:00 pm to 6:00 pm	Poster session	

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