

Electronic textures in strongly correlated oxides

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What is stopping the development and exploitation of the unique properties of strongly correlated systems? Strongly correlated systems display a wide range of potentially useful properties, ranging from superconductivity to colossal magnetoresistance. However, by their very nature, their strong correlations lead to many competing ground states. This in turn leads to electronic domains and inhomogeneities, over a range of real-space length scales, from nanometers to hundreds of microns. During this presentation, results from charge correlations in high Tc superconductors and antiferromagnetic domain imaging in bilayer manganites will be presented, including measurements under applied electrical current. These measurements were performed by a new technique of soft x-ray nano-diffraction and the future possibilities of this technique at NSLS-II will be presented.