Short Curriculum Vitae – Professor Efthimios Kaxiras

Efthimios Kaxiras was educated at the Massachusetts Institute of Technology where he received a PhD in theoretical condensed matter physics. He was a Postdoctoral Fellow at the IBM T.J. Watson Research Center (Yorktwon Heights, NY), a Consulting Research Physicist at the Naval Research Laboratory (Washington, DC), and a faculty member of Harvard University, where he became the Gordon McKay Professor of Applied Physics in the School of Engineering and Applied Sciences, Professor of Physics in the Department of Physics and Affiliate of the Department of Chemistry and Chemical Biology. He is currently Professor of Materials Science at the Institut des Materiaux, Ecole Polytechnique Federale de Lausanne, Switzerland. He has held several visiting appointments and administrative positions, most recently as Director of Harvard's Initiative in Innovative Computing, and holds several distinctions such as Fellow of the American Physical Society and Chartered Physicist and Fellow of the Institute of Physics.

His research field is computational materials science in a broad sense, ranging from the electronic properties of crystalline and amorphous solids and their dependence on the atomic structure, to the nature of electronic states and optical properties of biomolecules like DNA, melanin, flavonoids and organic dyes, to the microscopic origin of brittle or ductile response of solids and the effects of chemical impurities on mechanical behavior. His group has developed several original approaches for realistic simulations of solids, including inter-atomic potentials for covalent systems, real-space based methods for electronic structure calculations, and effective Hamiltonians for the treatment of very large systems of atoms. He has been a pioneer in developing multi-scale methodologies with the aim of capturing the behavior of complex physical systems starting at a fundamental level and reaching to macroscopic scales. He serves on the Editorial Board of several scientific journals, has published over 200 papers in refereed journals and several reviews in books, as well as a graduate textbook on the structure of solids.