

ADAM CLAYTON POWELL, IV

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Professional Interest: Modeling and simulation of physical phenomena related to materials and the economic impact of materials decisions.

EXPERIENCE

OPENNOVATION

Principal

Newton, MA

2007–Present

Engineering consulting in transport phenomena, modeling, and materials selection; specialist in electrochemical processes, polymer membrane fabrication, evaporation processes, and high-performance computing.

VERYST ENGINEERING LLC

Managing Engineer

Needham, MA

2006–2007

Technical consulting in failure analysis, phase inversion processes used to make polymer membranes, medical devices, primary metal production, electrochemistry, and use of advanced materials in product design.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Professor of Materials Engineering

Cambridge, MA

1999–2006

Authored 41 publications and gave 37 invited presentations (four in Japanese). Raised \$750,000 to conduct research in computational materials science, particularly simulating structure formation, fluid-structure interactions and electrochemistry, applied to semisolid metals, polymer membranes, electrolysis processes. Thesis advisor for 3 Ph.D. and 2 S.M. students, thesis committee for six Ph.D. students, research advisor to twelve undergraduates, academic advisor to 53 undergraduates. Taught courses in materials processing, transport phenomena, phase transformation kinetics, modeling and simulation. Organized ten symposia at professional society meetings. Authored nine software codes for research and education.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Metallurgist

Gaithersburg, MD

1997–1999

Conducted research in free surface dynamics and microstructure evolution at the Center for Theoretical and Computational Materials Science. Modeled solder droplet shape formation and mechanical deformation during cooling, applied this model to optical fiber alignment and flip-chip package design.

SANDIA NATIONAL LABORATORIES

OSSP Summer Intern

Albuquerque, NM

Summers 1992–1996

Pilot-scale experimentation in electron beam melting and refining, focused on characterization of alloy element evaporative losses and melt velocities, in conjunction with MIT doctoral thesis.

CURRENT AFFILIATIONS: Co-author of National Academies report on Integrated Computational Materials Engineering (in progress); MIT (Visiting Assistant Professor), Boston University (Visiting Scholar), University of Tokyo (Foreign Collaborative Researcher); Debian GNU/Linux (maintainer of nine scientific computing packages).

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Ph.D. in Materials Engineering

Cambridge, MA

1992–1997

Cumulative GPA: 4.9/5.0. Thesis title: *Transport Phenomena in Electron Beam Melting and Evaporation*. Advisors: Professor Julian Szekely, Professor Uday Pal. Research included pilot-scale experimentation at Sandia National Laboratories, finite element modeling of fluid flow, Direct Simulation Monte Carlo modeling of vapor transport in electron beam evaporation, heat transfer/kinetics model of alloying element evaporation rates.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

S.B. in Materials Science and Engineering, S.B. in Economics

Cambridge, MA

1988–1992

Cumulative GPA: 4.7/5.0. Economics thesis title: *A Model of the Automobile Recycling System*. Courses in: Materials core, metallurgy and polymers electives; Economics core, government regulation and environment electives; various programming; analysis and topology; Political Science concentration.

SKILLS: Programming in C, Java, Scheme, Fortran and Postscript; HTML website authoring; Japanese language (fluent speaker, moderate reading and writing), French language (moderate).