

Sample Resumes

Post Doc I Resume

Claudio V di Leo

Business Address

Massachusetts Institute of Technology
77 Massachusetts Av. Rm. E39-305
Cambridge, MA 02139
617-555-5555

Home Address

1234 Main Street Apt. 007
Cambridge, MA 02139
617-555-5555
phd@mit.edu

Education

Massachusetts Institute of Technology

Ph.D in Mechanical Engineering. GPA 4.9/5.0

- Provisional thesis title: Chemo-mechanics of energy storage materials: focus on Li-ion battery electrodes. Advisor: Lallit Anand
- Minor in micro and nano scale material science.

Cambridge, MA

Expected, June 20XX

Massachusetts Institute of Technology

M.S. in Mechanical Engineering. GPA 4.9/5.0

- Thesis title: A coupled theory for diffusion of hydrogen and large elastic-plastic deformations of metals. Advisor: Lallit Anand.

Cambridge, MA

June 20XX

Massachusetts Institute of Technology

B.S. in Mechanical Engineering. GPA 4.8/5.0

- Participated in four semesters of undergraduate research under the guidance of Prof. Lallit Anand resulting in an undergraduate thesis and a joint conference publication in the ASME IMECE 2010 proceedings.
- Thesis title: Nitinol-reinforced shape-memory polymers.

Cambridge, MA

February 20XX

Research Experience

MIT Mechanical Engineering

Advisor: Lallit Anand

Cambridge, MA

My research focuses on modeling the coupled multi-physics (deformation/diffusion) behavior of energy storage materials. My work combines rigorous thermodynamically-consistent constitutive frameworks with robust numerical implementations.

- Currently developing a coupled deformation-diffusion model for Silicon anodes. Thus far, the model has been calibrated to substrate curvature experiments and is capable of reproducing both the mechanical response as well as the electrochemical response of the experiments. Using this model I am studying the effect of deformation and plasticity on the electrochemical performance of various nano-dimensioned Silicon anodes which have been experimentally realized.
- Developed and numerically implemented a continuum level model which couples Cahn-Hilliard type diffusion with large elastic deformations to model the phase-separating behavior of Lithium when it intercalates in certain cathodes. We have shown through simulations of representative spheroidal particles that the lithiation morphology, as well the rate at which the battery can be charged, is highly dependent on the stress built-up in the particle.
- Developed a theory and numerical implementation for modeling hydrogen diffusion in metals undergoing large elastic-plastic deformations. The model was used to study hydrogen diffusion at a blunt-crack, and determine the appropriate boundary conditions for modeling the physical problem of a metal host exposed to gaseous hydrogen.

Research Interest	<p>My broad research interests are:</p> <ul style="list-style-type: none"> - Coupled multi-physics problems - Computational mechanics - Energy storage materials and the role of mechanics in their performance - Modeling of electrochemical phenomena (i.e. Li-intercalation, chemical reactions, etc.) at the continuum scale
Awards	<p>Graduate Student Paper Award for the presentation “Coupled diffusion deformation of phase-separating materials” bestowed by ASME and SES at the joint SES annual technical meeting and ASME-AMD annual summer meeting, July 20XX.</p> <p>Den Hartog Travel award in Mechanics awarded for travel to present at the ASME IMECE 2013 conference.</p> <p>20XX Wunsch Foundation Silent Hoist and Crane Award — Outstanding Teaching Assistant for the class Mechanics and Materials II.</p> <p>20XX AMP Inc. Award for outstanding performance in Mechanics and Materials II.</p>
Teaching Experience	<p>Teaching & Learning Laboratory at MIT <i>Spring 20XX</i> Teaching Certificate Program</p> <ul style="list-style-type: none"> • Completed a teaching certificate program based on seven workshops aimed at development of teaching skills. The program included exposure to relevant research in teaching and learning, and structuring of future teaching. • Presented two short teaching sessions which were videotaped, and from which I received feedback on my teaching performance as well as gave feedback to other participants. <p>Undergraduate Mechanics and Materials <i>Spring 20XX</i> Teaching assistant</p> <ul style="list-style-type: none"> • Teaching assistant for the undergraduate Mechanics and Materials class. Topics included strain, stress, elasticity, fracture, fatigue, plasticity, and viscoelasticity. • Prepared homework and exam problems/solutions, gave review lectures, and facilitated student laboratory experiments. • Developed a student project based on material selection in bicycle design. The project combined direct experimentation on bicycle forks tested in an Instron machine, finite-element modeling performed in Solidworks, and analytical beam bending solutions to explore material selection and design. • Overall rating 6.4/7.0. <p>Graduate Mechanics and Materials <i>Spring 20XX & Spring 20XX</i> Teaching assistant</p> <ul style="list-style-type: none"> • Teaching assistant for the graduate Mechanics Materials class. Topics included kinematics, stress, and balance principles. Linear elasticity and thermal elasticity. Viscoelasticity. Small-strain elastic-plastic deformation. Introduction to large deformations and nonlinear hyperelastic material behavior. • Taught a weekly one hour recitation which reviewed lecture material and solved example problems. Prepared homework and exam problems/solutions. • Overall rating 6.1/7.0.

Advising Experience	<p>MIT Mechanical Engineering <i>September 20XX to Present</i> Currently advising an undergraduate student as part of a research program for undergraduates at MIT and as part of her thesis work. The research focuses on the experimental characterization of the deformation-diffusion behavior of swellable elastomers.</p>
Industry Experience	<p>Apple, Inc. Cupertino, CA Interning Product Design Engineer <i>June to August 20XX</i></p> <ul style="list-style-type: none"> • Interned at Apple’s iPhone/iPod accessories product design team. Work involved mechanical design, CAD modeling, prototyping, reliability testing, and competitor benchmarking. • Two issued patents: “Accessory Controller for Electronic Devices” (US 8.314.354 B2). “Compact media player” (US 8.724.339 B2). <p>Qualcomm MEMS Technologies San Jose, CA Interning Engineer <i>June to August 20XX</i></p> <ul style="list-style-type: none"> • Characterized the mechanical behavior of Qualcomm’s MEMS display technology. • Performed extensive MATLAB programming to develop a graphical user interface for retrieving the optical response of a finite-element simulated pixel.
Publications (Accepted)	<p>Chester, S.A., Di Leo, C.V., and Anand, L. (20XX). A finite element implementation of a coupled diffusion-deformation theory for elastomeric gels. <i>International Journal of Solids and Structures</i>, 52, 1-18.</p> <p>Di Leo, C.V., Rejovitzky, E., and Anand, L. (20XX). A Cahn-Hilliard-type phase-field theory for species diffusion coupled with large elastic deformations: application to phase-separating Li-ion electrode materials. <i>Journal of the Mechanics and Physics of Solids</i>, 70, 129.</p> <p>Di Leo, C.V., Luk-Cyr, J., Liu, H., Loeffel, K., Al-Athel, K., and Anand, L. (20XX). A new methodology for characterizing traction-separation relations for interfacial delamination of thermal barrier coatings. <i>Acta Materialia</i>, 71, 306-318.</p> <p>Di Leo, C.V., and Anand, L. (20XX). Hydrogen in metals: A coupled theory for species diffusion and large elastic-plastic deformations. <i>International Journal of Plasticity</i>, 43, 42-69.</p> <p>Bhattacharyya, R., Di Leo, C.V., Floerkemeier, C., Sarma, S., and Anand, L. (20XX, November). RFID tag antenna based temperature sensing using shape memory polymer actuation. In <i>Sensors, 2010 IEEE</i>, 2363-2368.</p> <p>Chester, S.A., Srivastava, V., Di Leo, C.V., and Anand, L. (20XX, January). A large-deformation theory for thermally-actuated shape-memory polymers and its application. In <i>ASME 2010 IMECE</i>, 677-683.</p>
(Submitted)	<p>Di Leo, C.V., Rejovitzky, E., and Anand, L. Diffusion-deformation theory for amorphous silicon anodes: the role of plastic deformation on electrochemical performance. <i>Electrochimica Acta</i>, Submitted.</p> <p>Rejovitzky, E., Di Leo, C.V., and Anand, L. (20XX). A theory and a simulation capability for the growth of a solid electrolyte interphase layer at an anode particle in a Li-ion battery. <i>Journal of the Mechanics and Physics of Solids</i>, Submitted.</p>
(Preparation)	<p>Di Leo, C.V., and Anand, L. Split methods for solving the Cahn-Hilliard equation using finite element analysis. Application to phase-separation in elastic media.</p>

- Invited talks** **Di Leo, C.V.** (November, 20XX). Computational modeling of Silicon anodes: the role of mechanics on the electrochemical performance. *Mechanical and Industrial Engineering Department, New Jersey Institute of Technology.*
- Conferences (Lead author)** **Di Leo, C.V.**, Rejovitzky, E., and Anand, L. (June, 20XX). Coupled diffusion-deformations in phase-separating materials. *US National Congress of Theoretical and Applied Mechanics*, East Lansing, MI.
- Di Leo, C.V.**, Rejovitzky, E., and Anand, L. (November, 20XX). A Cahn-Hillard-type phase-field theory for species diffusion coupled with large elastic deformations. *ASME International Mechanical Engineering Congress and Exposition*, San Diego, CA.
- Di Leo, C.V.**, Rejovitzky, E., and Anand, L. (July, 20XX). Coupled diffusion-deformation of phase-separating materials. *SES Annual Technical Meeting and ASME-AMD Annual Summer Meeting*, Providence, RI.
- Di Leo, C.V.**, and Anand, L. (November, 20XX). Hydrogen in metals: A coupled theory for diffusion and large elastic-plastic deformations. *ASME International Mechanical Engineering Congress and Exposition*, Houston, TX.
- (Contributing Author)** Chester, S.A., **Di Leo, C.V.**, and Anand, L. (November, 20XX). A thermos chemo-mechanically coupled theory for thermally-responsive elastomeric gels. *ASME International Mechanical Engineering Congress and Exposition*, Denver, CO.
- Chester, S.A., Srivastava, V., **Di Leo, C.V.**, and Anand, L. (January, 20XX). A large-deformation theory for thermally-actuated shape-memory polymers and its application. *ASME International Mechanical Engineering Congress and Exposition*, Vancouver, BC Canada.
- Patents** Prest, C.D., and **Di Leo, C.V.** (20XX). "Compact media player." U.S. Patent No. 8,724,339.
- Prest, C.D., **Di Leo, C.V.**, and Minoo, J. (20XX). "Accessory controller for electronic devices." U.S. Patent No. 8,314,354.
- Skills** **Language:** Fluent in Spanish, Portuguese, German and English
Computer: Fortran, Abaqus (including UMAT and UEL), MATLAB, Solidworks, NX, Mastercam Lathe and Mill.
- References** **Professor Grand Publisher** Room E39-305 Department of Mechanical Engineering
Massachusetts Institute of Technology 77 Massachusetts Ave. Cambridge, MA 02139
USA 617-555-5555 phd@mit.edu
- Professor Ima Tenured** Room E39-305 Department of Mechanical Engineering
Massachusetts Institute of Technology 77 Massachusetts Ave. Cambridge, MA 02139
USA 617-555-5555 phd@mit.edu
- Professor Grant Winner** Room E39-305 Chem. Engineering and Applied Mathematics
Massachusetts Institute of Technology 77 Massachusetts Ave. Cambridge, MA 02139
USA 617-555-5555 phd@mit.edu
- Professor Amazing Course** Room E39-305 Mech. Engineering and Material Science
Massachusetts Institute of Technology 77 Massachusetts Ave. Cambridge, MA 02139
USA 617-555-5555 phd@mit.edu