CURRICULUM VITAE

PROTEEK CHOWDHURY
Department of Earth and Planetary Sciences
University of California, Riverside
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Education:

PhD, Department of Earth, Environmental and Planetary Sciences,
Rice University, Houston, Texas, USA 2020
PhD. Thesis: Geochemical fractionation during melting of sulfide and sulfate bearing mantle lithologies.

M.Sc., Geology and Geophysics, Indian Institute of Technology (I.I.T),
Kharagpur, India 2015
M.Sc. Thesis: Petrography, mineral chemistry and thermobarometric estimations of Tso-Morari eclogites, NW Himalayas.

B.Sc., Geology, Presidency College, University of Calcutta, Kolkata, India 2013

Professional Experience:

Postdoctoral Researcher, University of California, Riverside 2020-present

Research/ Teaching Assistant, Rice University 2015-2020

Summer Intern, Indian Institute of Science, India Jun 2014- Aug 2014
(with Dr. Ramanada Chakrabarti)

Research Interests:

Volatile cycling in deep Earth and other planetary bodies, subduction zone processes with special emphasis on redox conditions, trace element partitioning, role of melting and magma in the evolution of planets, isotope geochemistry, planetary differentiation.

Honors and Awards:

GSA Graduate Student Grant, Geological Society of America 2020

Torkild Rieber Award, Department of EEPS, Rice University 2020
(awarded to student with high academic standing)

Departmental Teaching Award, Department of EEPS Rice University 2019
(awarded to student with high teaching proficiency)

Outstanding Poster Award, Industry-Rice Earth Science Symposia,
Rice University 2019

Keck Fellowship, Rice University Jan 2018- May 2018

Weiss Fellowship, Rice University Jan 2016- Mar 2016

Foreign Travel Endowment, University of Calcutta 2015

CSIR-UGC Junior Research Fellowship: Council of Scientific & Industrial Research and
University Grants Commission, Govt. of India 2014

Institutional Fellowship, I.I.T, Kharagpur, India Jul 2013- Apr 2015

University Medal: 3rd rank holder in B.S., University of Calcutta 2013

Peer-Reviewed Publications:

Dasgupta, R., **Chowdhury, P.**, Eguchi, J., Sun, C. & Saha, S. (**Accepted, Reviews in Mineralogy and Geochemistry**). *Volatile-bearing partial melts in the lithospheric and sub-lithospheric mantle on Earth and other rocky planets*.

Chowdhury, P., Dasgupta, R., Phelps, P., Lee, C-T. A. & Anselm, R.A**.** (2021). *Partitioning of chalcophile and highly siderophile elements (HSEs) between sulfide and carbonated melts – Implications for HSE systematics of kimberlites, carbonatites, and melt metasomatized mantle domains.* Geochimica et Cosmochimica Acta 305:130-147. doi: 10.1016/j.gca.2021.05.006

Chowdhury, P. & Dasgupta, R**.** (2020). *Sulfur extraction via carbonated melts from sulfide-bearing mantle lithologies - Implications for deep sulfur cycle and mantle redox.* Geochimica et Cosmochimica Acta 269:376-397. doi: 10.1016/j.gca.2019.11.002

Chowdhury, P. & Dasgupta, R. (2019). *Effect of sulfate on the basaltic liquidus and sulfur concentration at anhydrite saturation (SCAS) of hydrous basalts – Implications for sulfur cycle in subduction zones*. Chemical Geology 522:162-174. doi:10.1016/j.chemgeo.2019.05.020

Chowdhury, P., Dasgupta, R., Phelps, P., Costin, G. & Lee, C-T. A. **(in review, Geochimica et Cosmochimica Acta).** *Oxygen fugacity of subducting crust inferred from fractionation of trace elements during fluid-present slab melting in the presence of anhydrite versus sulfide.*

Lerner, A., Muth, M., Wallace, P., Lanzirotti, A., Newville, M., Gaetani, G., **Chowdhury, P.** & Dasgupta, R. (**in revision**, **Chemical Geology***) Improving the reliability of Fe- and S-XANES measurements in silicate glasses: correcting beam damage and identifying Fe-oxide nanolites in hydrous and anhydrous melt inclusions.*

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (**in preparation, to be submitted in American Mineralogist**). *The oxidation state of sulfur in apatites from Martian meteorite- Shergotty.*

Conference Abstracts & Organized Sessions:

Chowdhury, P., Rudra, A., Holycross, M., & Kulka, B. (2021). *Recycling in the Subduction Factory: Characterization of subduction induced mantle heterogeneities through interdisciplinary approaches.* ***AGU Fall Meeting 2021; Session D018***

Chowdhury, P. and Bhattacharya, J. (2021) *Representation of Asian Americans in Geosciences versus other STEM fields.* ***AGU Fall Meeting 2021*** [part of DIVERSITY, EQUITY, and INCLUSIVITY WORK].

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (2021). Determination of *sulfur speciation in apatite from Martian meteorites using μ-XANES.* ***AGU Fall Meeting 2021***

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (2021). Determination of *sulfur speciation in apatites from Martian meteorites (shergottites) using μ-XANES.* ***Goldschmidt 2021***

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (2021). *Sulfur speciation in apatites from Martian meteorite- Shergotty using μ-XANES.* ***Microscopy and Microanalysis 2021*** https://doi.org/10.1017/S1431927621009041

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (2021). *The oxidation state of sulfur in apatites from Martian meteorite- Shergotty.* ***LPSC 2021***

Chowdhury, P., Dasgupta, R., Phelps, P., Lee, C-T. A. & Anselm, R. (2020). December. *Partitioning of chalcophile and highly siderophile elements (HSEs) between sulfide and carbonated melts – Implications for HSE systematics of kimberlites and carbonatites.* ***In AGU Fall Meeting Abstracts****.*

Dasgupta, R., **Chowdhury, P.**, Eguchi, J., Sun, C. & Saha, S. (2020). *Extraction of Life-Essential Volatiles via Melting of Rocky Planetary Mantles of Variable Redox.* ***Goldschmidt 2020****.*

Lerner, A., Muth, M., Wallace, P., Lanzirotti, A., Newville, M., Gaetani, G., **Chowdhury, P.** & Dasgupta, R. (2020*) Correcting Fe- and S-XANES Beam Damage and Recognizing Rapid Redox Equilibration of Olivine-Hosted Melt Inclusions.* ***Goldschmidt 2020****.*

Chowdhury, P., Dasgupta, R., Phelps, P., Costin, G. & Lee, C-T. A. (2019). December. *Partitioning of trace elements between anhydrite and sediment melts: Implications for subducting sediment redox and Ce/Mo at arcs.* ***In AGU Fall Meeting Abstracts.***

Chowdhury, P. and Dasgupta, R. (2018). December. *Sulfur extraction via carbonated melts from sulfide-bearing mantle lithologies-Implications for deep sulfur cycle.* ***In AGU Fall Meeting Abstracts****.*

Chowdhury, P. and Dasgupta, R. (2017). December. *Effect of sulfate on the liquidus and sulfur concentration at anhydrite saturation (SCAS) of hydrous basalt at subduction zones.* ***In AGU Fall Meeting Abstracts****.*

Diversity, Equity, and Inclusivity (DEI) Experience:

Member of URGE pod at UC Riverside — Spring 2021
(Led sessions and drafted deliverables)

Teaching and Mentoring Experience:

Teaching Assistant of ESCI 419/619: Materials Characterization — Spring 2020
(Assisting in Lab and separate lectures)

Mentor of Ryan Anselm, high-school intern,
Experimental Petrology Lab, Rice University — Summer 2019

Mentor of Melinda Zhou, high-school intern,
Experimental Petrology Lab, Rice University — Summer 2019

Mentor of Prithika Sen, high-school intern,
Experimental Petrology Lab, Rice University — Summer 2018

Teaching Assistant of ESCI 322: Earth's Chemistry and Materials — Fall 2018
(Assisting in Lab and separate lectures)

Lab Instructor of Geochemistry & Cosmochemistry — Fall 2014

Skills:

Technical: Multi-Anvil, Piston Cylinder, Gas-Mixing Furnace, Clean-Lab, micro-XANES

Analytical: Raman, Electron Microprobe, ICP-MS/LA-ICP-MS, SEM, TEM, FTIR
Modelling and Editing: MATLAB, MELTS, Excel, Adobe Illustrator, Adobe Photoshop

Academic Services:

Reviews:

Journal Reviewer: Earth and Planetary Science Letters (EPSL); Journal of Petrology
Abstract Reviewer: Young Earth Scientist (YES) conference

Memberships and Collaborations:

American geophysical Union (AGU); Geological Society of America (GSA); Mineralogical Society of America (MSA); Geochemical Society.
Smithsonian Institution, NASA.

Invited presentations:

Presidency University, Kolkata, India	January 2021
Zhejiang University, Hangzhou, China	February 2021

Field Works:

Field work in Lesser Himalayas, sampling	2010
Field work in Aravalli Range, Rajasthan, sampling, and mapping (**field leader**).	2011
Field work in Phosphate and Pb-Zn mine, Udaipur, Rajasthan	2012
Field work in Angul, Eastern Ghats, Odisha, mapping (**field leader**).	2013
Field work in Ghatshila, Jharkhand, sedimentary mapping	2014
Field work in Cascades, Oregon, California, and Washington	2015
Field work in Grand Canyon and Mt. Pass, California	2016