CHOWDHURY, PROTEEK- Curriculum Vitae

Department of Earth and Planetary Sciences
University of California, Riverside
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EDUCATION:

Ph.D., 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
Summer Assistant, Presidency College, India May 2013- Jul 2013

RESEARCH INTERESTS:

Volatile cycling planetary bodies, subduction zone processes, trace element partitioning, role of melting and magma in the evolution of planets, isotope geochemistry, planetary differentiation.

HONORS & 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. (**In Press, Reviews in Mineralogy and Geochemistry**). *Volatile-bearing partial melts in the lithospheric and sub-lithospheric mantle on Earth and other rocky planets*. [Invited contribution].

Chowdhury, P., Dasgupta, R., Phelps, P., Costin, G. & Lee, C-T. A. (2022). *Oxygen fugacity range of subducting crust inferred from fractionation of trace elements during fluid-present slab melting in the presence of anhydrite versus sulfide.* Geochimica et Cosmochimica Acta, doi: https://doi.org/10.1016/j.gca.2022.02.030

Lerner, A., Muth, M., Wallace, P., Lanzirotti, A., Newville, M., Gaetani, G., **Chowdhury, P.** & Dasgupta, R. (2021). *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.* Chemical Geology,120610, doi: https://doi.org/10.1016/j.chemgeo.2021.120610

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

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (**in preparation**). *The oxidation state of sulfur in Martian apatite- Implications for redox of surficial processes.*

CONFERENCE ABSTRACTS & SESSIONS ORGANIZED:

Chowdhury, P., Brounce, M., Boyce, J.W., & McCubbin, F.M. (2022). *The oxidation state of sulfur in Martian apatite- Implications for redox of surficial processes.* ***LPSC 2022***

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 INCLUSION 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 INCLUSION (DEI) WORK:

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

TEACHING AND MENTORING EXPERIENCES:

6. Teaching Assistant of ESCI 419/619: Materials Characterization — Spring 2020
   (Assisting in Lab and separate lectures)
5. Mentor of Ryan Anselm, high-school intern,
   Experimental Petrology Lab, Rice University — Summer 2019
4. Mentor of Melinda Zhou, high-school intern,
   Experimental Petrology Lab, Rice University — Summer 2019
3. Mentor of Prithika Sen, high-school intern,
   Experimental Petrology Lab, Rice University — Summer 2018
2. Teaching Assistant of ESCI 322: Earth's Chemistry and Materials — Fall 2018
   (Assisting in Lab and separate lectures)
1. 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: Geochimica et Cosmochimica Acta; Earth and Planetary Science Letters (EPSL); Journal of Petrology; Geology
Abstract Reviewer: Young Earth Scientist (YES) conference

MEMBERSHIPS AND COLLABORATIONS:

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

INVITED PRESENTATIONS:

6. Cornell University — February 2022
5. Lunar and Planetary Institute — November 2021
4. University of Michigan, Ann Arbor — October 2021
3. UC Riverside Astrobiology Seminar, Riverside, California — October 2021
2. Presidency University, Kolkata, India — January 2021
1. Zhejiang University, Hangzhou, China — February 2021

FIELD WORK AND EXPERIENCES:

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