Stanford



Alam Mahmud

Postdoctoral Scholar, Chemical Engineering

NIH Biosketch available Online Curriculum Vitae available Online

Bio

BIO

I develop electronic–molecular interfaces that enable continuous, quantitative measurement of molecular signals in living systems. As a Postdoctoral Scholar with Professor Zhenan Bao, I created carbon electronics, an integrated materials–measurement strategy for direct, receptor-free detection of cortisol and melatonin, and translated it into fully printed implantable sensors. I earned my Ph.D. in Electrical and Computer Engineering from the University of Toronto under Professors Ted Sargent and Shana Kelley, where I generalized the molecular pendulum, a reagent-free electrochemical sensing principle, across receptor classes.

STANFORD ADVISORS

- Zhenan Bao, Postdoctoral Faculty Sponsor

PATENTS

- Mahmud A, Bao Z. "United States Patent Stanford Docket No. S26-442 Transition-Resolved Biosensing at Carbon Interfaces.", Leland Stanford Junior University, Sep 11, 2026

LINKS

- Google Scholar: https://scholar.google.com/citations?hl=en&user=czZw9NsAAAAJ

Research & Scholarship

PROJECTS

- Carbon electronics for continuous molecular monitoring

Publications

PUBLICATIONS

- **Sensitive Hormone and Neurotransmitter Detection with Carbon Flower Electrodes** *ADVANCED FUNCTIONAL MATERIALS*
  Weber, I. C., Patino, D., Hsu, K., Zosso, Y., Dusselberg, A. L. M., Chen, T., Parkatzidis, K., Wei, S., Mahmud, A., Bastide, G. H., Remund, A. L., Wu, M., Bao, et al
  2026