Stanford

Adam Marks

Physical Science Research Scientist

Materials Science and Engineering

Bio

ACADEMIC APPOINTMENTS

- Physical Science Research Scientist, Materials Science and Engineering

PROFESSIONAL EDUCATION

- Ph.D., Imperial College London , Polymer Chemistry (2020)
- MSci, Imperial College London , Chemistry (2016)

Publications

PUBLICATIONS

- **Optimizing the open-circuit voltage and overall performance for indoor organic photovoltaics via wide-gap polymeric donor materials** *ORGANIC ELECTRONICS*
  Theunissen, D., Jiang, X., Vanderspikken, J., Arwani, R., Marks, A., Kumar, R., Leten, L., Valkeneers, K., Mertens, S., Lutsen, L., Salleo, A., Vandewal, K., Maes, et al
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- **pH Controls Charge Localization in Redox-Active Ladder Polymers.** *Journal of the American Chemical Society*
  De La Fuente Durán, A., Siemons, N., Marks, A., Magni, A., Dijk, G., Chueh, W. C., Salleo, A., Mefford, J. T.
  2026
- **Revealing the Full Potential of Glycolated Mixed Ionic-Electronic Semiconductors - Symmetric Monomer Polymerization to Boost Electrochemical Transistor Performance.** *Journal of the American Chemical Society*
  Bynens, L., Mantegazza, P., Marks, A., Park, Y., Goossens, A., Moro, S., Quill, T. J., Lecroy, G., Cheng, C., Magni, A., Lutsen, L., Vanderspikken, J., Spencer, et al
  2026
- **Electron-ion coupling breaks energy symmetry in bistable organic electrochemical transistors** *COMMUNICATIONS MATERIALS*
  Bongartz, L. M., Lecroy, G., Quill, T. J., Siemons, N., Dijk, G., Marks, A., Cheng, C., Kleemann, H., Leo, K., Salleo, A.
  2025; 6 (1)
- **The Importance of Organic Mixed Ionic-Electronic Conductor (OMIEC)-Water Interactions: A Perspective.** *Journal of the American Chemical Society*
  Siemons, N., De La Fuente Durán, A., Shad, A. C., Iyer, M., Chen, F. Y., Marks, A., Chueh, W., Salleo, A.
  2025
- **Design, synthesis, and photovoltaic performance of regioisomeric D18-Impact of cross-conjugation on electronic structure and solar cell efficiency** *ORGANIC ELECTRONICS*
  Valkeneers, K., Leten, L., Gielen, S., Cardeynaels, T., Mertens, S., Vanderspikken, J., Arwani, R., Marks, A., Salleo, A., Kumar, R., Lutsen, L., Vandewal, K., Maes, et al
  2025; 145

- **Revealing polymerisation defects and formation mechanisms in aldol condensation for conjugated polymers via high-resolution molecular imaging.** *Nature communications*
  Wu, X., Moro, S., Marks, A., Alsufyani, M., Yu, Z., Perdigão, L. M., Chen, X., Luci, A. M., Crockford, C., Spencer, S. E., Fox, D. J., Pei, J., McCulloch, et al
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- **Organic Electrochemical Transistor Channel Materials: Copolymerization Versus Physical Mixing of Glycolated and Alkoxylated Polymers** *ADVANCED FUNCTIONAL MATERIALS*
  Bynens, L., Zhang, K., Cavassin, P., Goossens, A., Vanderspikken, J., Castillo, T. C. H., Tsokkou, D., Marks, A., Magni, A., Weaver, K., Lutsen, L., Inal, S., Vandewal, et al
  2025

- **The Influence of Alkyl Spacers and Molecular Weight on the Charge Transport and Storage Properties of Oxy-Bithiophene-Based Conjugated Polymers.** *Angewandte Chemie (International ed. in English)*
  Yu, H., Marks, A., Tuladhar, S. M., Siemons, N., Anderson, I., Bidinger, S., Keene, S. T., Quill, T. J., Wu, R., Gough, O., Wu, G., Eisner, F., Salleo, et al
  2024: e202417897

- **The hierarchical structure of organic mixed ionic-electronic conductors and its evolution in water.** *Nature materials*
  Tsarfati, Y., Bustillo, K. C., Savitzky, B. H., Balhorn, L., Quill, T. J., Marks, A., Donohue, J., Zeltmann, S. E., Takacs, C. J., Giovannitti, A., McCulloch, I., Ophus, C., Minor, et al
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- **The Role Of Side Chains and Hydration on Mixed Charge Transport in N-Type Polymer Films.** *Advanced materials (Deerfield Beach, Fla.)*
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- **Enhancement of Conjugated Polymer Microstructure and Mixed-Conducting Properties via Chalcogenophene Heteroatom Substitution** *CHEMISTRY OF MATERIALS*
  Paulsen, B. D., Meli, D., Moser, M., Marks, A., Ponder Jr, J. F., Wu, R., Schafer, E. A., Strzalka, J., Zhang, Q., Mcculloch, I., Rivnay, J.
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- **Charge Carrier Induced Structural Ordering And Disordering in Organic Mixed Ionic Electronic Conductors.** *Advanced materials (Deerfield Beach, Fla.)*
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- **Origins of hydrogen peroxide selectivity during oxygen reduction on organic mixed ionic-electronic conducting polymers** *ENERGY & ENVIRONMENTAL SCIENCE*
  Duran, A., Liang, A., Denti, I., Yu, H., Pearce, D., Marks, A., Penn, E., Treiber, J., Weaver, K., Turaski, L., Maria, I. P., Griggs, S., Chen, et al
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- **On the Importance of Chemical Precision in Organic Electronics: Fullerene Intercalation in Perfectly Alternating Conjugated Polymers** *ADVANCED FUNCTIONAL MATERIALS*
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- **Volumetric Electron Transfer from Metabolites to Chemically Doped Polymer Electrodes** *ADVANCED FUNCTIONAL MATERIALS*
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- **An ordered, self-assembled nanocomposite with efficient electronic and ionic transport.** *Nature materials*
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- **2D metal-organic frameworks for ultraflexible electrochemical transistors with high transconductance and fast response speeds** *SCIENCE ADVANCES*
  Song, J., Liu, H., Zhao, Z., Guo, X., Liu, C., Griggs, S., Marks, A., Zhu, Y., Law, H., McCulloch, I., Yan, F.
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- **The effect of residual palladium on the performance of organic electrochemical transistors.** *Nature communications*
  Griggs, S., Marks, A., Meli, D., Rebetez, G., Bardagot, O., Paulsen, B. D., Chen, H., Weaver, K., Nugraha, M. I., Schafer, E. A., Tropp, J., Aitchison, C. M., Anthopoulos, et al
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- **Conjugated polymers for microwave applications: untethered sensing platforms and multifunctional devices.** *Advanced materials (Deerfield Beach, Fla.)*
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- **Tuning Organic Electrochemical Transistor Threshold Voltage using Chemically Doped Polymer Gates.** *Advanced materials (Deerfield Beach, Fla.)*
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- **Synthetic Nuances to Maximize n-Type Organic Electrochemical Transistor and Thermoelectric Performance in Fused Lactam Polymers.** *Journal of the American Chemical Society*
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- **Organic Electrochemical Transistors: An Emerging Technology for Biosensing** *ADVANCED MATERIALS INTERFACES*
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- **The effect of side chain engineering on conjugated polymers in organic electrochemical transistors for bioelectronic applications** *JOURNAL OF MATERIALS CHEMISTRY C*
  He, Y., Kukhta, N. A., Marks, A., Luscombe, C. K.
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- **Propylene and butylene glycol: new alternatives to ethylene glycol in conjugated polymers for bioelectronic applications** *MATERIALS HORIZONS*
  Moser, M., Wang, Y., Hidalgo, T., Liao, H., Yu, Y., Chen, J., Duan, J., Moruzzi, F., Griggs, S., Marks, A., Gasparini, N., Wadsworth, A., Inal, et al
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- **Molecular Design Strategies toward Improvement of Charge Injection and Ionic Conduction in Organic Mixed Ionic-Electronic Conductors for Organic Electrochemical Transistors.** *Chemical reviews*
  Kukhta, N. A., Marks, A., Luscombe, C. K.
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- **n-Type organic semiconducting polymers: stability limitations, design considerations and applications** *JOURNAL OF MATERIALS CHEMISTRY C*
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- **n-Type Rigid Semiconducting Polymers Bearing Oligo(Ethylene Glycol) Side Chains for High-Performance Organic Electrochemical Transistors** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
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- **Reversible Electrochemical Charging of n-Type Conjugated Polymer Electrodes in Aqueous Electrolytes.** *Journal of the American Chemical Society*
  Szumska, A. A., Maria, I. P., Flagg, L. Q., Savva, A., Surgailis, J., Paulsen, B. D., Moia, D., Chen, X., Griggs, S., Mefford, J. T., Rashid, R. B., Marks, A., Inal, et al
  2021

- **O-17 NMR spectroscopy as a tool to study hydrogen bonding of cholesterol in lipid bilayers** *CHEMICAL COMMUNICATIONS*
  Rowlands, L. J., Marks, A., Sanderson, J. M., Law, R.
  2020; 56 (92): 14499-14502

- **Polaron Delocalization in Donor-Acceptor Polymers and its Impact on Organic Electrochemical Transistor Performance.** *Angewandte Chemie (International ed. in English)*

Moser, M. n., Savva, A. n., Thorley, K. n., Paulsen, B. D., Hidalgo, T. C., Ohayon, D. n., Chen, H. n., Giovannitti, A. n., Marks, A. n., Gasparini, N. n., Wadsworth, A. n., Rivnay, J. n., Inal, et al

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- **Polaron spin dynamics in high-mobility polymeric semiconductors** *NATURE PHYSICS*

  Schott, S., Chopra, U., Lemaur, V., Melnyk, A., Olivier, Y., Di Pietro, R., Romanov, I., Carey, R. L., Jiao, X., Jellett, C., Little, M., Marks, A., McNeill, et al

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- **Long spin diffusion lengths in doped conjugated polymers due to enhanced exchange coupling (vol 2, pg 98, 2019)** *NATURE ELECTRONICS*

  Wang, S., Venkateshvaran, D., Mahani, M. R., Chopra, U., McNellis, E. R., Di Pietro, R., Schott, S., Wittmann, A., Schweicher, G., Cubukcu, M., Kang, K., Carey, R., Wagner, et al

  2019; 2 (7): 313

- **Critical review of the molecular design progress in non-fullerene electron acceptors towards commercially viable organic solar cells** *CHEMICAL SOCIETY REVIEWS*

  Wadsworth, A., Moser, M., Marks, A., Little, M. S., Gasparini, N., Brabec, C. J., Baran, D., McCulloch, I.

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- **Long spin diffusion lengths in doped conjugated polymers due to enhanced exchange coupling** *NATURE ELECTRONICS*

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  2019; 2 (3): 98-107

- **Crystal Engineering of Dibenzothiophenothieno[3,2-b]thiophene (DBTTT) Isomers for Organic Field-Effect Transistors** *CHEMISTRY OF MATERIALS*

  Chen, H., Schweicher, G., Planells, M., Ryno, S. M., Broch, K., White, A. J. P., Simatos, D., Little, M., Jellett, C., Cryer, S. J., Marks, A., Hurhangee, M., Bredas, et al

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