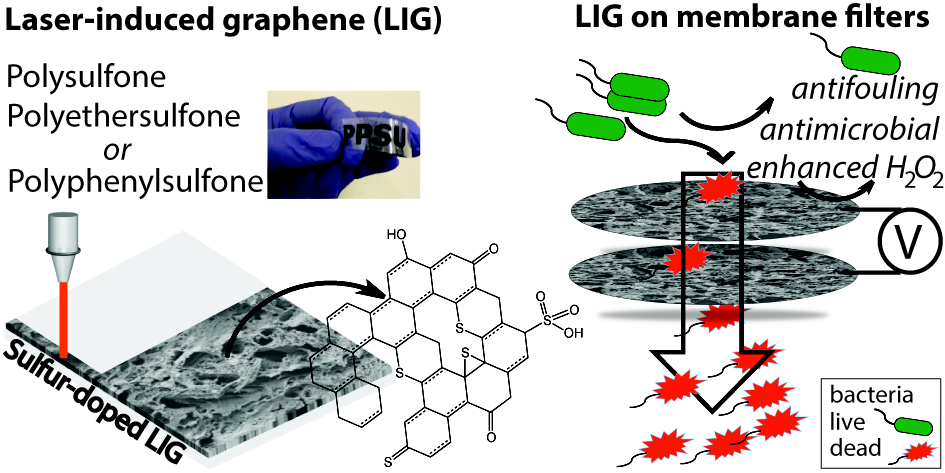
**Christopher J. Arnusch –IKI report**

***Research Activities***

The Arnusch lab aims to positively impact the field of membrane science, water treatment and new materials in two distinct ways: i) by exploring and developing unconventional ways to improve membrane fabrication and modification using various printing techniques and ii) exploring and developing new materials including graphene-based materials.

We have made significant advances this past year especially with a novel material named “laser-induced graphene” (LIG). This material can now be generated on almost all carbon containing substrates. Notably, we discovered how to apply LIG on porous polymer membranes, as well as demonstrated numerous environmental applications. Seen below is the graphical abstract (from REF 34) for our most significant advance where LIG is fabricated on porous UF membranes, and these membranes are used as porous electrodes and display antifouling and antimicrobial action with applied voltage.



***Publications***

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38. Shtreimer Kandiyote, N.; Mohanraj, G.; Mao, C.; Kasher, R.\*; Arnusch, C. J.\* Synergy on Surfaces: Anti-Biofouling Interfaces using Surface-Attached Antimicrobial Peptides PGLa and Magainin-2. *Langmuir* 2018, 34 (37), 11147-11155.  
  
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28. Singh, S. P.; Li, Y.; Be’er A.; Oren, Y.; Tour, J. M.\*; Arnusch, C. J.\* Laser-Induced Graphene Layers and Electrodes Prevents Microbial Fouling and Exerts Antimicrobial Action *ACS Applied Materials and Interfaces* 2017, *9* (21), 18238-18247.  
  
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