



Kenneth O Annan, PhD

Objective:

To profile my qualities in terms of achievements, strengths and interests, to tailor my accomplishments, potentials, and merits to suitably challenging and worthwhile endeavors, to ensure optimum utilization and realization of most effective rewards – “in brief I like to know that my knowledge and experiences are helping to provide solutions to problems that would otherwise remain unresolved”.

Experience:

8/2008 – 2/2009 Eureka College, 300 East College Avenue, Eureka, IL 61530.

Assistant Professor Chemistry

Teaching undergraduate courses in general, environmental and organic Chemistry, and quantitative chemical analysis. As the Chemical Safety Officer for Eureka College, I am responsible for providing resources and support for reducing potential chemical and environmental hazards associated with chemicals in laboratories and other areas of chemical usage. The Office is tasked with ensuring the university's compliance with State and Federal regulations and an up-to-date record of appropriate MSDS for all chemicals on campus. Services offered, also include hazardous waste disposal, laboratory and workplace inspections, and training for individuals associated with chemical usage.

8/2005 – 6/2007 University of Maryland Eastern Shore, Carver Washington hall, Princess Anne, MD 21853, Tel.: (410)-651-6400 / Fax (410)-651-6500

Lecturer

Teaching undergraduate courses in general and organic Chemistry.

Research Interests

Structural and conductivity studies of certain polymer electrolytes with a view to lowering their T_g and enhancing their conductivity for possible application in batteries. As well as investigation of the cutting edge research study in the preparation and investigation of stepped ladder type conducting polymers with a view to discovering increasingly vanishing bandgap materials.

9/2004 – 7/2005 University of Houston, Houston, TX 77004

Adjunct Researcher

Assisted in the direction and supervision of some 12 graduate students and postdoctoral fellows in a light-emitting polymer research group. Provided additional readily available hands-on solution source for group problem solving. Investigated the design and synthesis of organic macromolecules and oligomers capable of controlled-assembly or self-organization as ultrathin films. Synthesized functional amphiphile, as well as polymerization on surfaces, network formation, and preparation of pi-electron conjugated polymers.

9/2001 – 12/2003 Northwestern University Evanston, IL 60208

Post-doctoral Research Fellow

Mentored and supervised a graduate student, and assisted in the preparation and defense of his PhD thesis. Worked in the synthesis, characterization, and investigation of perfluorinated polyelectrolyte materials for the fabrication of high energy density lithium batteries. Planned, organized and executed scientific research, evaluating the resulting data and where necessary revising experimental methodologies and techniques, and then adopting new approaches in a search for plausible and meaningful strategies and results.

5/2000 – 9/2001 Topicare Products Ltd Basildon, Essex, UK

Personal Care Formulation Chemist

Researched and developed a range of body care products that increased sales by 15%. Accomplished tasks working methodically and thoroughly in routine formulation procedures. Provided stewardship and regulatory support for colleagues and clients, including safety aspects of manufacturing.

1999 – 2000 AB Electronic Ltd. Romford Essex, UK

Ink Formulation Chemist

Researched and formulated a range of conductive inks and coatings which enhanced the performance and properties of AB's sensors and transducers and helped to raise sales by 13%. Applied methodical and thoroughly thought out chemical principles in the design and formulation of new conductive inks, which ensured the manufacture of first class sensors and transducers. This involved the application of several polymer chemical additives, which thus required a thorough understanding of the efficacy and interaction of the chemical additives and the polymers.

Screen-printed newly formulated inks, and applied sensor application principles in the evaluation of the inks. Teamed with senior management in decision making regarding the selection and purchasing of materials and equipment. Assumed responsibility for resolving problems associated with the formulation of thick film pastes and coatings. Analyzed complex technical problems, and single-handedly planned and executed various experiments in line with project requirements.

1998 – 1999 Cambridge Display Technology Cambridge, UK

Development Chemist

Planned, organized and carried through chemical research projects and the evaluation of results. And where necessary revised and modified experimental strategies and techniques, by adopting completely new approaches in a bid to arrive at desired results. Synthesized, characterized, and studied photo-luminescent (light-emitting) polymers for display applications. Compiled, wrote, edited, and re-wrote scientific documents for publication in scientific journals.

Education:

1993–1998 University of London, London, UK	-	PhD, Chemistry.
1990–1993 Brunel University Uxbridge, Middlesex, UK	-	MPhil, Chemistry.
1980–1984 University of London, London, UK	-	BSc, Chemistry.

Masters Dissertation Title:

“The Chemistry of Some Isatoic Anhydrides”

Abstract: Isatoic anhydride derivatives are used as chromophores to obtain information about metabolic processes. The desired property of such fluorescent substrates is a high quantum yield, and an absorption and emission maxima distinct from those of the system being investigated. Derivatives of dimethoxyisatoic anhydrides are expected to be strongly fluorescent. It is therefore interesting to find convenient preparation of the dimethoxyisatoic anhydrides.

Doctoral Dissertation Title:

“Exploration of routes to polyparaphenylene and polythiophene derived conducting polymers”

Abstract: The synthesis, characterization and investigation of a series of novel poly (3, 4-ethylenedioxythiophenediyl) benzylidines, and polyphenylenes were presented as prospective electroactive polymers. A precursor route strategy to polyparaphenylene (PPP) was devised which involved a nickel (0) catalyzed polycondensation of an oxanorbornadiene system, followed by aromatization and then hydrolysis and decarboxylation of the substituted ester groups to give the target unsubstituted PPP.

Advisors: Prof. Dr. Klaus Müllen, Director – Max Planck Institute for Polymer Research, Germany; Prof. J H P Utley, Queen Mary & Westfield College, University of London, UK.

Professional Affiliations:

Member American Chemical Society,
Member of the Association of Consulting Chemist & Chemical Engineers Inc.
Chemical Consultants Network

Publications:

1. K O Annan, U Scherf, K Müllen, “Visible-emitting Poly [(3', 4'-dialkoxycarbonyl-2'-hydroxy-1, 1': 5', 1''-terphenyl-4, 4''-ylene)]”, *Synthetic Metals* 99, 1999, 9.
2. K O Annan, M Foster, U Scherf, “Conjugated Ladder Polymers Containing Thienylene Units”, *Macromolecules* 32, 9, 1999, 3139.
3. K O Annan, M Foster, J Pan, D Haarer, U Scherf, “Synthesis and Charge Carrier Photogeneration in Novel Ladder Polymers Containing 2,5-Thienylene Units”, *Polymer International* 49, 2000, 913.
4. K O Annan, Erik Moderegger, Franz P Wenzl, Stefan Tasch, Günther Leising, Ulli Scherf, “Comparison of the Internal Field Distribution in Light-Emitting Diodes and Light –Emitting Electrochemical Cells”, *Advance Materials* 12 (11), 2000, 825.
5. K O Annan, D Somitsch, F P Wenzl, G Leising, P Wilhelm, U Scherf, P Knoll, “Temperature Dependent Structural Stability of Ladder Type Poly (p-phenylenes)”, *Synthetic Metals*, 119 (1-3): 2001, 349.

6. K O Annan, F P Wenzl, P Pachler, S Tasch, D Somitsch, P Knoll, U Scherf, G Leising, "Ion Dissociation in Crown Ether Based Wide Band Gap LECs", *Synthetic Metals*, 121 (1-3): 2001, 1735.
7. K O Annan, M Sampietro, G Ferrari, D Natali, U Scherf, F P Wenzl, G Leising, "Tracking of Conduction Phenomena and Degradation in Organic Light Emitting Diodes by Current Noise Measurements", *Applied Physics Letters*, 78(21): 2001, 3262.