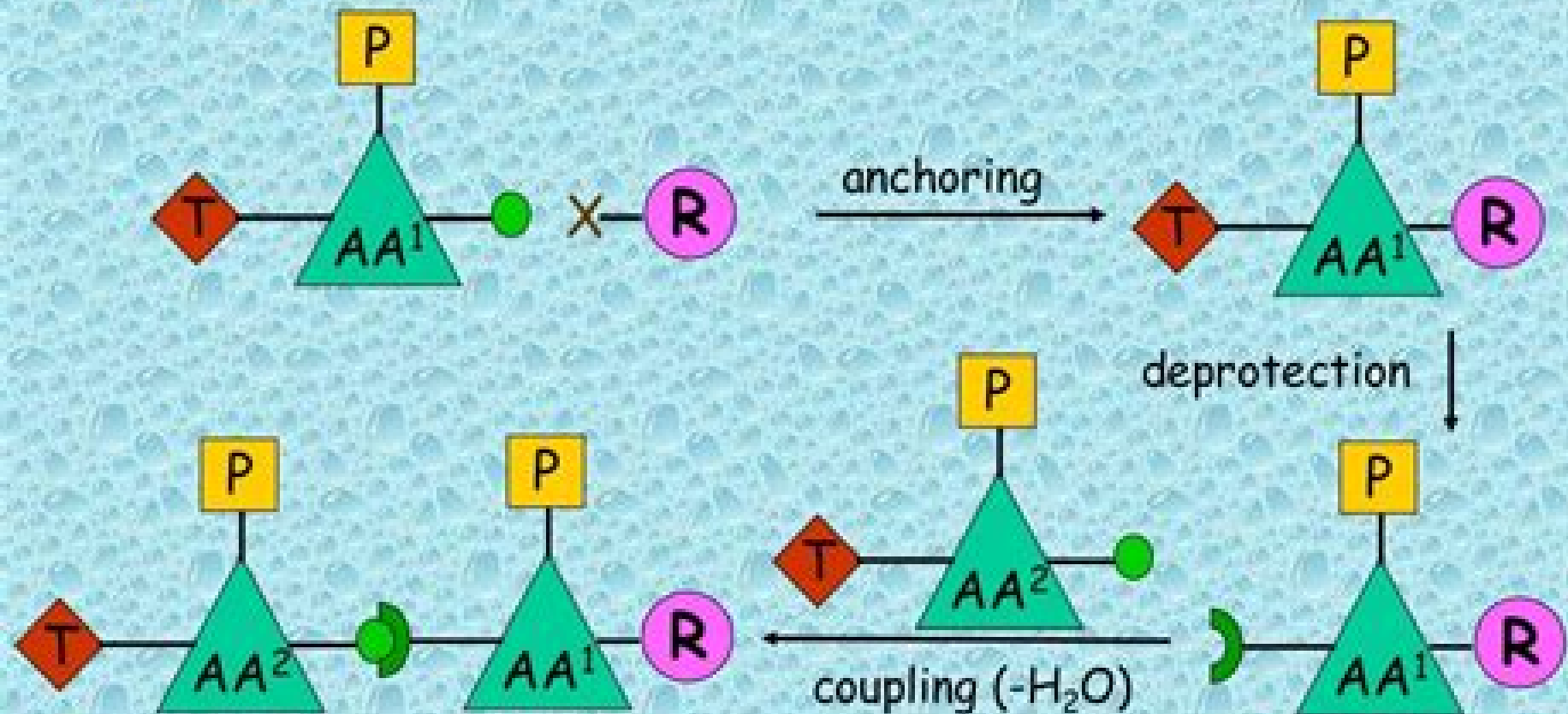


SOLID PHASE PEPTIDE SYNTHESIS

Bruce Merrifield published in 1963

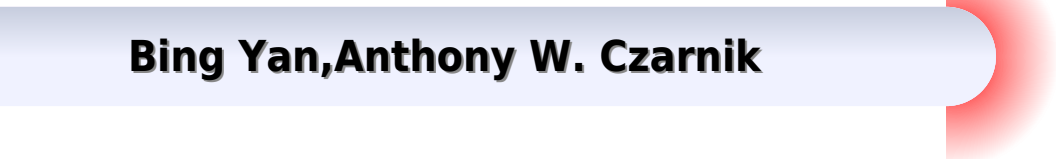
Nobel Prize in Chemistry in 1984

The idea:



Solid Phase Organic Synthesis

Bing Yan, Anthony W. Czarnik



Solid Phase Organic Synthesis:

Solid-Phase Organic Synthesis Patrick H. Toy, Yulin Lam, 2012-01-10 Presents both the fundamental concepts and the most recent applications in solid phase organic synthesis With its emphasis on basic concepts Solid Phase Organic Synthesis guides readers through all the steps needed to design and perform successful solid phase organic syntheses The authors focus on the fundamentals of heterogeneous supports in the synthesis of organic molecules explaining the use of a solid material to facilitate organic synthesis This comprehensive text not only presents the fundamentals but also reviews the most recent research findings and applications offering readers everything needed to conduct their own state of the art science experiments Featuring chapters written by leading researchers in the field Solid Phase Organic Synthesis is divided into two parts Part One Concepts and Strategies discusses the linker groups used to attach the synthesis substrate to the solid support colorimetric tests to identify the presence of functional groups combinatorial synthesis and diversity oriented synthesis Readers will discover how solid phase synthesis is currently used to facilitate the discovery of new molecular functionality The final chapter discusses how using a support can change or increase reaction selectivity Part Two Applications presents examples of the solid phase synthesis of various classes of organic molecules Chapters explore general asymmetric synthesis on a support strategies for heterocyclic synthesis and synthesis of radioactive organic molecules dyes dendrimers and oligosaccharides Each chapter ends with a set of conclusions that underscore the key concepts and methods References in each chapter enable readers to investigate any topic in greater depth With its presentation of basic concepts as well as recent findings and applications Solid Phase Organic Synthesis is the ideal starting point for students and researchers in organic medicinal and combinatorial chemistry who want to take full advantage of current solid phase synthesis techniques

Solid-Phase Organic Syntheses, Volume 1 Anthony W. Czarnik, 2004-04-07 The rapid expansion of combinatorial chemistry has renewed interest in solid phase organic synthesis a method that lends itself well to creating and screening large numbers of lead compounds Solid Phase Organic Syntheses Volume 1 is the first volume in a series that will be updated annually filling a gap in the existing chemical literature Providing information previously unavailable from a single resource this series is dedicated to providing researchers in the field with validated and tested methods for the solid phase synthesis of interesting and biologically relevant molecules Solid phase methods will virtually always be invented for application in combinatorial organic synthesis To meet these specific needs Solid Phase Organic Syntheses Volume 1 focuses on a single type of synthetic transformation accomplished on solid support and indicates how procedures are optimized to work with a structurally wide variety of reagents Written by recognized leaders in the field who review and test all chemical protocols before publication organic transformations are organized by type of compound synthesized and reaction type For the first time experimental details for proven solid phase synthetic molecules are collected in a single invaluable resource Solid Phase Organic Syntheses Volume 1 provides combinatorial chemists and researchers in organic chemistry and

medicinal chemistry with the tools and descriptive protocols to achieve syntheses of desired compounds using a variety of solid supports and reagents

Solid-Phase Organic Synthesis Kevin Burgess, 2004-03-22 Solid Phase Organic Synthesis Edited by Kevin Burgess Texas A some report minor modifications enabling transformation of solution phase methods to a solid support while others report major innovations Solid Phase Organic Synthesis collects highlights and critiques some of the key developments in the field Leading practitioners explain different perspectives on diverse aspects of the area Specific topics covered include Syntheses of guanidines Palladium catalyzed C C bond forming reactions S_NAr reactions for the formation of heterocycles Sequence specific arylalkyne oligomers Resin supported capture agents and other reagents Synthesis on pins Monitoring of supported reactions using IR Solid phase syntheses of natural product derivatives Of related interest Combinatorial Chemistry and Molecular Diversity in Drug Discovery Eric M Gordon and James F Kerwin 1998 0 471 15518 7 544 pp Combinatorial Chemistry Synthesis and Application Stephen R Wilson and Anthony W Czarnik 1997 0 471 12687 X 288 pp

Linker Strategies in Solid-Phase Organic Synthesis Peter Scott, 2009-10-13 Linker design is an expanding field with an exciting future in state of the art organic synthesis Ever increasing numbers of ambitious solution phase reactions are being adapted for solid phase organic chemistry and to accommodate them large numbers of sophisticated linker units have been developed and are now routinely employed in solid phase synthesis Linker Strategies in Solid Phase Organic Synthesis guides the reader through the evolution of linker units from their genesis in solid supported peptide chemistry to the cutting edge diversity linker units that are defining a new era of solid phase synthesis Individual linker classes are covered in easy to follow chapters written by international experts in their respective fields and offer a comprehensive guide to linker technology whilst simultaneously serving as a handbook of synthetic transformations now possible on solid supports Topics include the principles of solid phase organic synthesis electrophile and nucleophile cleavable linker units cyclative cleavage as a solid phase strategy photocleavable linker units safety catch linker units enzyme cleavable linker units T1 and T2 versatile triazene linker groups hydrazone linker units benzotriazole linker units phosphorus linker units sulfur linker units selenium and tellurium linker units sulfur oxygen and selenium linker units cleaved by radical processes silicon and germanium linker units boron and stannane linker units bismuth linker units transition metal carbonyl linker units linkers releasing olefins or cycloolefins by ring closing metathesis fluororous linker units solid phase radiochemistry The book concludes with extensive linker selection tables cataloguing the linker units described in this book according to the substrate liberated upon cleavage and conditions used to achieve such cleavage enabling readers to choose the right linker unit for their synthesis Linker Strategies in Solid Phase Organic Synthesis is an essential guide to the diversity of linker units for organic chemists in academia and industry working in the broad areas of solid phase organic synthesis and diversity oriented synthesis medicinal chemists in the pharmaceutical industry who routinely employ solid phase chemistry in the drug discovery business and advanced undergraduates postgraduates and organic chemists with an

interest in leading edge developments in their field

Organic Synthesis on Solid Phase Florencio Zaragoza

Dörwald,2000-04-13 This is the number one successful book on solid phase organic synthesis now in its second expanded edition It offers the reader a comprehensive overview of supports spacers and linkers 15% more contents everything there is to know about reactions and their applications clear structure numerous experimental guidelines for use in practice The ideal reference for newcomers and experts I have no doubts that this text will be the benchmark for future publications on the subject and a very hard act to follow for authors planning books of their own on this red hot topic The Alchemist

Solid-Phase Organic Syntheses, Volume 2 Peter J. H. Scott,2012-07-02 Integrates solid phase organic synthesis with palladium chemistry The Wiley Series on Solid Phase Organic Syntheses keeps researchers current with major accomplishments in solid phase organic synthesis providing full experimental details Following the validated tested and proven experimental procedures readers can easily perform a broad range of complex syntheses needed for their own experiments and industrial applications The series is conveniently organized into themed volumes according to the specific type of synthesis This second volume in the series focuses on palladium chemistry in solid phase synthesis exploring palladium catalysts and reactions procedures for preparation and utilization ligands and linker reactions The first part of the volume offers a comprehensive overview of the field Next the chapters are organized into three parts Part Two Palladium Mediated Solid Phase Organic Syntheses Part Three Immobilized Catalysts and Ligands Part Four Palladium Mediated Multifunctional Cleavage Each chapter is written by one or more leading international experts in palladium chemistry Their contributions reflect a thorough examination and review of the current literature as well as their own first hand laboratory experience References at the end of each chapter serve as a gateway to the field s literature The introduction of palladium mediated cross coupling reactions more than thirty years ago revolutionized the science of carbon carbon bond formation It has now become a cornerstone of today s synthetic organic chemistry laboratory With this volume researchers in organic and medicinal chemistry have access to a single resource that explains the fundamentals of palladium chemistry in solid phase synthesis and sets forth clear step by step instructions for conducting their own syntheses

Handbook of Reagents for Organic Synthesis, Reagents for High-Throughput Solid-Phase and Solution-Phase Organic Synthesis Jonathan A.

Ellman,2005-05-20 Since its discovery in 1963 by R B Merrifield solid phase synthesis or polymer supported synthesis has become an essential technique with its wide use in the synthesis of peptides and other oligomers Solid Phase Reactions provides extensive and comprehensive information on this form of synthesis in a format ideal for those working in the laboratory As part of the Handbook of Reagents in Organic Synthesis Series this new addition extends the wealth of information available to the chemist at the bench All content has been expertly collected and presented by an internationally recognised and respected editorial board led by Professor Peter Wipf

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engineering techniques for organic synthesis and medicinal chemistry Green chemistry remains a high priority in modern organic synthesis and pharmaceutical R D with important environmental and economic implications This book presents comprehensive coverage of green chemistry techniques for organic and medicinal chemistry applications summarizing the available new technologies analyzing each technique s features and green chemistry characteristics and providing examples to demonstrate applications for green organic synthesis and medicinal chemistry The extensively revised edition of Green Techniques for Organic Synthesis and Medicinal Chemistry includes 7 entirely new chapters on topics including green chemistry and innovation green chemistry metrics green chemistry and biological drugs and the business case for green chemistry in the generic pharmaceutical industry It is divided into 4 parts The first part introduces readers to the concepts of green chemistry and green engineering global environmental regulations green analytical chemistry green solvents and green chemistry metrics The other three sections cover green catalysis green synthetic techniques and green techniques and strategies in the pharmaceutical industry Includes more than 30% new and updated material plus seven brand new chapters Edited by highly regarded experts in the field Berkeley Cue is one of the fathers of Green Chemistry in Pharma with backgrounds in academia and industry Brings together a team of international authors from academia industry government agencies and consultancies including John Warner one of the founders of the field of Green Chemistry Green Techniques for Organic Synthesis and Medicinal Chemistry Second Edition is an essential resource on green chemistry technologies for academic researchers R D professionals and students working in organic chemistry and medicinal chemistry

Optimization of Solid-Phase Combinatorial Synthesis Bing Yan,Anthony W. Czarnik,2001-12-04 Addresses the key topic in combinatorial synthesis how to optimize the quality of a combinatorial library by determining the usefulness of synthesized compounds the reliability of biological assay results and analyzing academic and industrial applications real world examples and case studies of successful and unsuccessful technologies

Solid-Phase Synthesis Fernando Albericio,2000-04-28 This volume provides the information needed to synthesize peptides by solid phase synthesis SPS employing polymeric support resins anchoring linkages handles coupling reagents activators and protection schemes It presents strategies for creating a wide variety of compounds for drug discovery and analyzes peptides DNA carbohydrates

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