




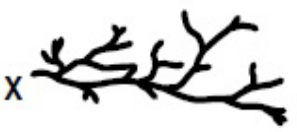




# **Synthesis of Arborescent Amphiphilic Copolymers**

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# Introduction

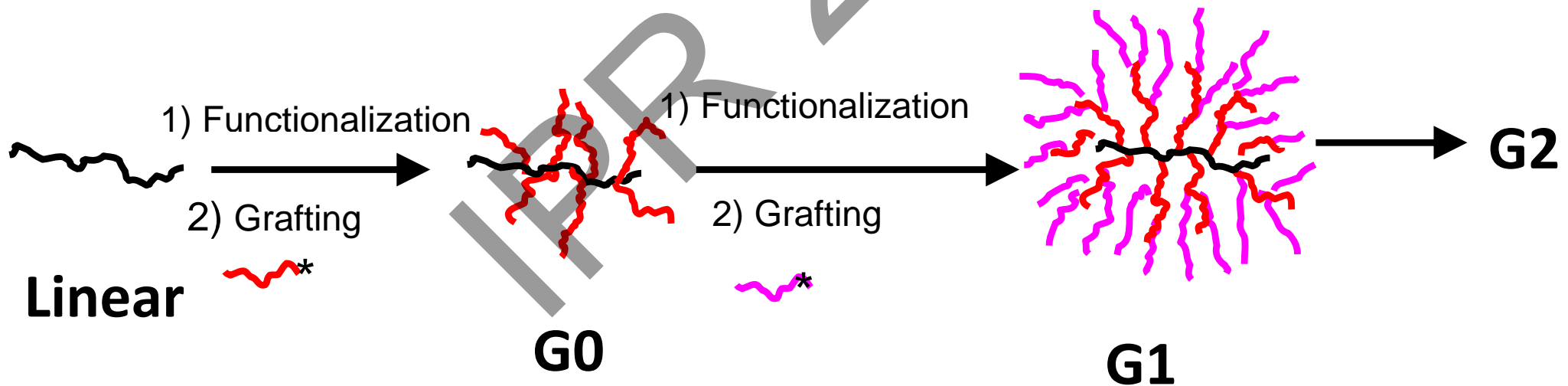
- Synthetic polymers can be categorized by their molecular architecture
- Dendrigraft polymers belong to the dendritic polymers family

I. Linear	II. Cross-linked	III. Branched	IV. Dendritic		
			(a)  Random Hyperbranched	(b)  Dendrigrafts	(c)  Dendrimers

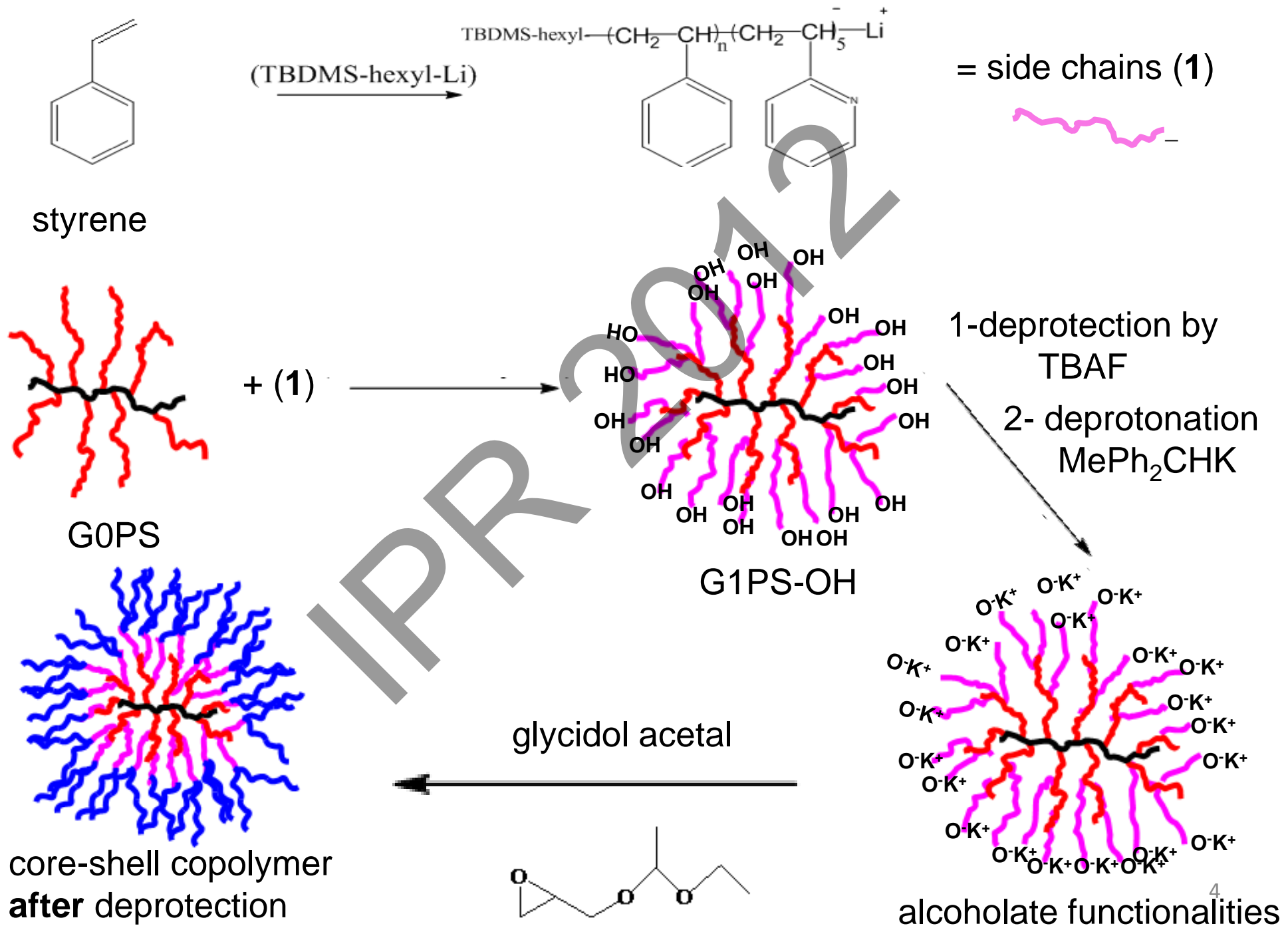
-DONALD A. TOMALIA,<sup>1</sup> JEAN M. J. FRE'CHET<sup>2</sup>, 2726 J. POLYM. SCI. PART A: POLYM. CHEM.: VOL. 40 (2002).

# Dendrigraft or Arborescent Polymers

- “Arborescent” refers to a tree-like architecture
- Synthesis by a generation-based scheme with cycles of substrate functionalization and grafting



# Amphiphilic copolymers Reaction Scheme



# Conclusions

- Synthesis of linear and arborescent polystyrene substrates by cycles of acetylation and grafting
- Synthesis of hydrophobic hydroxyl-functionalized arborescent G0-G3 cores using a bifunctional initiator
- Synthesis of glycidol acetal
- Growth of poly(glycidol acetal) chains from hydroxyl-functionalized cores to form a shell
- Deprotection of the acetal to obtain a shell of hydrophilic polyglycidol segments