# Article information:

Fluoride-promoted carbonylation polymerization: a facile step-growth technique to polycarbonates - Chemical Science (RSC Publishing)
<https://pubs.rsc.org/en/content/articlelanding/2017/SC/C6SC05582F>

# Article summary:

1. Fluoride-Promoted Carbonylation (FPC) polymerization is a novel catalytic polymerization methodology that complements ROP and unlocks a greater synthetic window to advanced polycarbonates.

2. CsF is identified as an efficient catalyst and the bis-carbonylimidazolide monomers are synthesized as bench-stable white solids, easily obtained on 50–100 g scales from their parent diols using cheap commercial 1,1′-carbonyldiimidazole (CDI).

3. FPC methodology enabled the synthesis of a unique library of polycarbonates covering rigid, flexible and reactive PC backbones, molecular weights 5–20 kg mol−1, dispersities of 1.3–2.9 and a wide span of glass transition temperatures, from −45 up to 169 °C.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Fluoride-promoted carbonylation polymerization: a facile step-growth technique to polycarbonates” published in Chemical Science (RSC Publishing) presents a novel two-step strategy for the synthesis of functional polycarbonates from simple bis-carbonylimidazolide and diol building blocks via step-growth using CsF as an innovative polymerization catalyst. The article is well written and provides detailed information about the process and its potential applications. The authors provide evidence for their claims by citing relevant literature sources throughout the article.

The article does not present any biases or one-sided reporting; instead it provides an unbiased overview of the process with clear explanations of its advantages over existing methods such as ring opening polymerization (ROP). Furthermore, all possible risks associated with this method are noted in the article, such as the formation of corrosive/toxic byproducts during traditional step growth polymerization processes involving phosgene or dialkyl carbonates.

In conclusion, this article is reliable and trustworthy due to its comprehensive coverage of the topic with clear explanations and evidence provided for each claim made throughout the text.

# Topics for further research:

* Fluoride-promoted carbonylation polymerization
* Step-growth polymerization
* Polycarbonates synthesis
* CsF as a catalyst
* Ring opening polymerization
* Phosgene and dialkyl carbonates risks

# Report location:

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