Preliminary market analysis of PEEK in South America: Opportunities and challenges

Victor de Cerjat Beltrão[1], Marco Antonio Gaya de Figueiredo[2], **Harrison Lourenço Corrêa[3]***

[3]*Laboratory of Polymer Materials, Technology Sector,Department of Mechanical Engineering, Federal University of Paraná*

***harry.lou.correa@gmail.com** - Brazil*

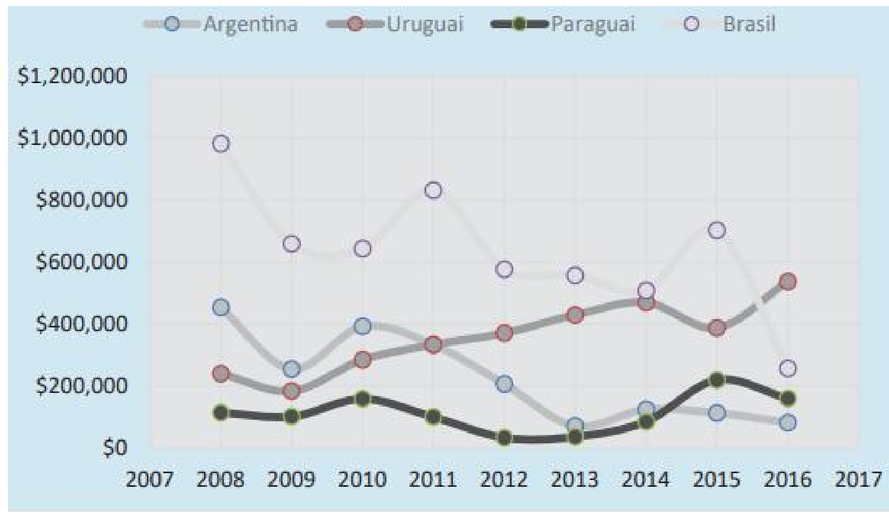
5th Edition of International Conference on Polymer Science and Technology

July 30-31, 2019 - Amsterdam

Introduction

PEEK (poly-ether-ether-ketone) is a thermoplastic semi crystalline homopolymer that belongs to the poly-aryl-ether-ketones (PAEK) family. PEEK is currently considered a high performance polymer due to its optimized properties compared to other polymers, which makes it fit to high-demand applications, including prosthesis by additive manufacturing.

The South American market, particularly, may be a target, since there is no industry producing PEEK in this region and the demand is potentially high. Therefore, this study aims to analyze and estimate the PEEK demand as an input for the manufacture of prosthesis, verifying the feasibility of an industry in the Brazilian and Mercosur (Common Market Group of South America) markets.

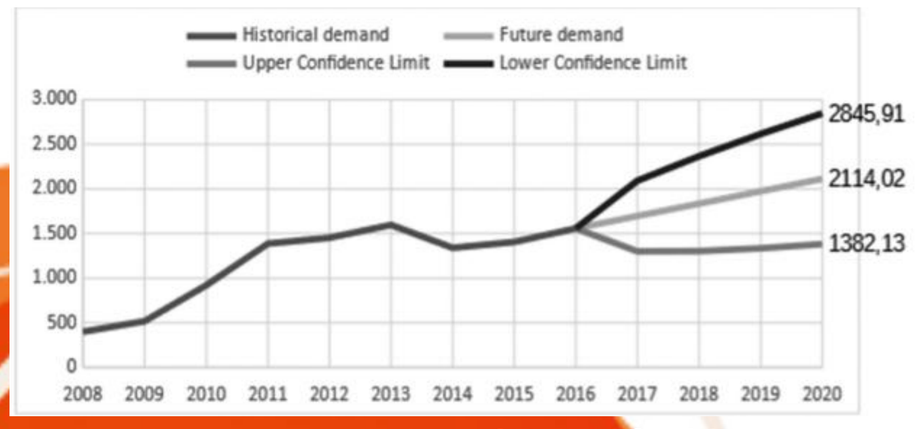


Trade balance of PEI for the Mercosur market

Materials and methods

A method for determining the apparent value of the demand is presented in: Demand = Imports + Production - Exports

The Brazilian import and export relevant data for international products were accessed through the platform “Aliceweb”, provided by the Brazilian Minister of Industry, Foreign Trade and Services. The products in the database bank are registered using the Mercosur Common Nomenclature (NCM). Since there is no NCM dedicated exclusively to PEEK, we chose the NCM 39119024 related to polyetherimide (PEI), a polymer that has both properties and the market fairly similar to those of PEEK. The future demand of the PEEK was estimated using Excel 2016 which enables the creation of a forecast spreadsheet automatically using the method of exponential smoothing.The historical data found for the demand is inserted in chronological order and the smoothing factor is calculated internally with an optimization tool. The confidence interval was 95%.



Future demand prediction of PEEK for Mercosur

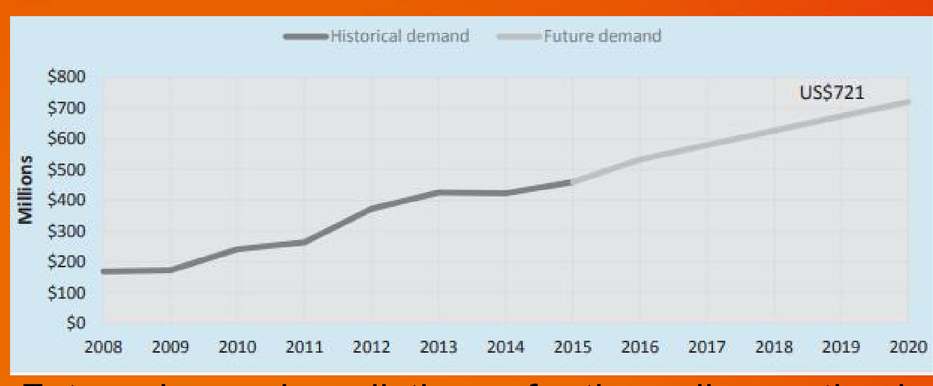
Results



Commercial trade of orthopedic prosthesis in Brazil



Trade balance of PEI for the Brazilian market



Future demand predictions of orthopedic prosthesis in Brazil(confident limits of 95%)

Conclusions

The future demand for PEEK is higher to historical demand (2016 to 2020). And considering that the future demand predictions of orthopedic prosthesis in Brazil tends to be higher than $ 720 million, it is expected that the consumption for PEEK occasionally used for prosthesis grows up too. The data collected indicates good perspectives for PEEK consume. But it is important to notice that the two biggest markets of PEEK producers, USA and United Kingdom, do not input their data in the Trade Map. This can reduce the total amount of export calculated in comparison with the possible real data. A deeper investigation regarding production costs and the installed production capacity of the industry is needed.

To know more about, see the article accessing https://doi.org/10.1515/epoly-2019-0035

Do you want to know more about the authors? Visit the URL:

http://lattes.cnpq.br/1852858066847211 - Prof. Harrison Lourenço Corrêa

http://lattes.cnpq.br/1138639549823932 - Prof. Marco Gaya de Figueiredo