1163-68-93      **Nektarios A Valous\*** (`nek.valous@nct-heidelberg.de`), **Rodrigo Rojas Moraleda**, **Eckhard Hitzer**, **Dragoş Duşe**, **Meggy Suarez-Carmona**, **Anna Berthel**, **Dirk Jäger**, **Inka Zörnig** and **Niels Halama**. *Processing color information in natural and biomedical images.*

Color pixels can be encoded by a linear combination of the three basis vectors in a hypercomplex algebra framework; this encoding provides the opportunity to process color images in a geometric way. The proposed approach is based on a rapid and flexible method of recolorizing, decolorizing, and separating colors in natural and biomedical (histology) images using quaternions. This pixel-based approach is computationally efficient thus taking advantage of parallel architectures in modern computing systems. This computational method has applications either as a standalone module or as part of automated processing pipelines, and essentially it demonstrates that feature-rich mathematical frameworks provide efficient solutions for color image processing. (Received August 13, 2020)