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Title:	On irreducible factors of polynomials over complete fields
Authors:	Khanduja, S.K. (/jspui/browse?type=author&value=Khanduja%2C+S.K.)
Keywords:	Valued fields Non-Archimedean valued fields Irreducible polynomials
Issue Date:	2013
Publisher:	World Scientific
Citation:	Journal of Algebra and its Applications, 12(1).
Abstract:	Let (K, v) be a complete rank-1 valued field. In this paper, we extend classical Hensel's Lemma to residually transcendental prolongations of v to a simple transcendental extension $K(x)$ and apply it to prove a generalization of Dedekind's theorem regarding splitting of primes in algebraic number fields. We also deduce an irreducibility criterion for polynomials over rank-1 valued fields which extends already known generalizations of Schönemann Irreducibility Criterion for such fields. A refinement of Generalized Akira criterion proved in Khanduja and Khassa [Manuscripta Math.134(1–2) (2010) 215–224] is also obtained as a corollary of the main result.
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